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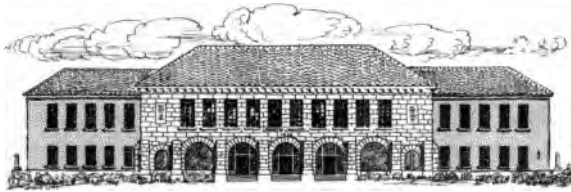
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**HEALTH
AND THE SCHOOL**

HEALTH AND THE SCHOOL

A Round Table

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TO
AMERICA'S MOTHERS AND TEACHERS
GUARDIANS OF A NATION'S STRENGTH

INTRODUCTION

Recent years have witnessed notable advances in our comprehension of the conditions governing the health of children. We have been astonished at the number of defects found among them; we have received new convictions in regard to provision for air and play; and we have become acquainted with better methods for warding off disease.

Nor is our attitude on this whole matter by any means so theoretical as it was even a few years ago. Indeed, the extent to which all this knowledge is finding application, in communities of all sorts, is striking. Herbert Spencer's charge that people were generally far more interested in the health and general care of their horses, cattle, and hogs than in that of their children will hardly hold much longer. And it seems likely that good health will soon rank *first*, in the minds of teachers and parents, among the things that make up a good education.

The realization of this promise will mark a revolution in the practice of the schools; for, in times past, they have really, if not consciously, sacrificed health for the acquisition of knowledge. Training institutions for teachers have even been among the worst offenders in this respect. But observation is teaching us that, while neither knowledge nor health can be wholly neglected, the former is far inferior to the latter as a condition of

success. School instruction in physiology and hygiene is still almost a farce, to be sure; but a better time is in sight.

In consequence of the striking advances in this field, there is pressing need of literature that summarizes both the theory and practice at present accepted, and in a style making the facts thoroughly clear and interesting to the ordinary reader.

The present volume helps to meet this need in a most effective way. It accomplishes three things: From widely scattered sources it brings together the theoretical facts pertaining to health, that seem well established, and that are most valuable; it suggests how these facts have been applied, and, to some extent, shows the extent of that application up to the present time; and it presents all this matter in a surprisingly simple and attractive manner.

While excellent judgment seems to have been shown in determining what should be presented, the style of presentation is specially worthy of attention. The method is conversational, the subjects of conversation being just such questions and objections as the thoughtful, really interested, but perhaps skeptical person would desire to ask; and these are answered in a remarkably direct and convincing way.

F. M. McMURRY.

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PREFACE

The present widely aroused interest in matters of health has developed a great need among teachers and parents and public officials for practical guidance. The sickness and health of children are not really controlled by fate and the doctors, as many parents and teachers assume, but by those who regulate the daily conditions under which children live—parents, teachers and government officials. If these controlling powers are not thoroughly informed and intelligently alert, no amount of national agitation and legislation will secure the health of children.

It is comparatively easy for people with no technical training to learn a few fundamental matters concerning health—what normal health is, the conditions essential to its maintenance, the detection of many organic defects, the approach of acute diseases, and the effect upon individual children and their associates of allowing removable defects and diseases to continue.

This book sets forth the health problems which must be met in every school and family, and furnishes a working program for parents, teachers, school boards and boards of health.

The material has been put in the form of conferences such as might take place in any town which is successfully solving the problems connected with the health of its children. While most of the problems under discussion are focused in the school and the home, the people

taking part in the conferences are not limited to teachers and parents. The health of children is a concern not exclusively of anxious parents or faithful teachers, neither of which groups has yet been very successful in securing it. Healthy children are vitally needed by the whole community which has to exert its highest intelligence and power to produce them.

In the following conferences the zeal of teachers and the solicitude of parents are supplemented by the scientific knowledge of a physician, the experience and sympathy of a social worker, and the practical sense of a successful business man.

The characters are not of course transcribed from life, nor is it claimed that the investigations and reforms credited to them have as yet all taken place in a single town. Each one, however, has taken place in some town. Every statistical item reported has been secured through actual investigation, in various cities and states.

The time has come for such scattered investigations and reforms to be included in the health program of every town. Many communities realize this, but are uncertain how to begin their novel task. It can only be accomplished through groups of active citizens for whom the conference method in this book may serve as a suggestion for procedure.

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PERSONS TAKING PART IN THE CONFERENCES

MR. YOUNG. Superintendent of schools. He is trusted and admired by the whole town, and is regarded by his school-board as a model of progressive efficiency.

MR. MARTIN. A member of the school board, also a widower with many cares. He is unenlightened, but eager to learn.

MR. ROSS. A self-made business man, satisfied with his work and with society. He is constrained by his superior wife to assume an active interest in all social welfare movements.

MRS. ROSS. An awakening woman, whose husband's money has given her leisure to look around. This has aroused in her a sense of social responsibility.

MISS PARSONS. A social worker, whose active sympathies and penetrating mind command a following wherever she moves.

DR. LATTA. A physician, new in the town. His elaborate and spotless office equipment is the scorn of most of the old practitioners who view his new-fangled methods and notable successes with jealous alarm.

Health and the School

I

ARE EDUCATION AND HEALTH INCOMPATIBLE?

MR. YOUNG.—A profound movement, destined to accomplish great results, is stirring our entire country. On every hand we hear the question, "How can we better our schools?" As a people, we are finding out that popular education has not kept up with the procession. We see every day the last miracle of science or invention instantly appropriated by the industrial and commercial world. We see the efficiency of industrial institutions keyed daily to a higher and higher pitch. Why is it not so with our schools? Why do they not profit by the last scientific discovery or invention as do our railroads and factories and department stores?

Is there no branch of science which can specially serve our schools, and whose every advance means equal advance in our system of education? Though the schools have been slow to realize it, there is evidently one science, the most important of all, that is intimately connected with their efficiency. This science in its recent unprecedented development has benefited humanity far more wonderfully than any other. It is the science of medicine, the knowledge and control of health and disease. Its discoveries lie at the service of our schools.

Healthful schools and healthy children have suddenly become the demand of the day. I believe we can have both, if we determine to; if we are willing to act on even a part of the modern medical knowledge that is ours for the asking. Like most school men, I have been long in waking up to this vital matter, which a recent experience revealed to me with sudden force.

Last week my youngest little girl came running to me to know when school was to open. As she eagerly questioned the number of days before she was to enter school, and with forty other children be crowded into a classroom for long hours of weary work for young brains and little fingers, I wondered how long her cheeks would stay rosy and the spring in her step remain. I confess to my shame that I began to question whether I could not arrange to get her into some private school, where her physical comfort and welfare would receive more careful attention than her class standing. Then an accusing thought struck me. If I could not trust my own child's precious body to the schools that are under my direction, what about the 5,000 other young bodies that are gathered in these schools every day? As the sense of this overwhelming responsibility came upon me I was stung with remorse, for I reflected that the most we had ever done for the physical welfare of these 5,000 children was to see that the school buildings were sufficiently heated, and that contagious diseases were somewhat guarded against.

While we have been patiently studying new ways of directing our long-suffering children's minds, we have never thought to find out whether the avenues to their minds were open; whether their eyes and noses and mouths and ears and brains were in shape to do business; whether the physical conditions under which the chil-

dren were working were the best possible; whether the home conditions were wholesome; whether the children were learning habits of health.

We school people have already far more educational theory than we practice, but do we know anything about the theory and practice of children's health? I would not trust my little girl's physical care to any one who knows as little about it as I do. I have always left it to her mother and the doctor; but, heaven forgive me, for eight years now I have been partly responsible for the health of 5,000 boys and girls, and what have I been doing? What have we all been doing? Leaving the matter to Providence and the parents, many of them more ignorant than ourselves.

We have calmly taken for granted that the general health of the children should decline through the winter, and that coughs and sneezes should punctuate all the recitations from autumn to spring. We have accepted as inevitable the fact that June finds the children pale and nervous and worn, as they issue from the school mill which they entered so buoyantly in September. Now, I want to know whether this physical deterioration is a necessary price of education. I wish to lose no time in finding this out, for, if it is really so, I am not willing to continue in a business that actually damages children.

I need help in investigating this question. I therefore propose that we devote the year's study to the health of children, in school and home; and that to-night we try to arrive at some conclusion concerning this question: Are education and health incompatible?

MR. MARTIN.—If Mr. Young's earnest words were not so evidently prompted by deep conviction, I should suppose he intended his gruesome question as a joke. Are education and health incompatible? How can they

be? Have not improved health and longer life followed step by step with increasing education?

DR. LATTI.—They have followed step by step with a certain form of education, that of the scientific laboratory, which has indeed diminished disease and lengthened life; but our common schools are still producing quite reverse results, as they have always done.

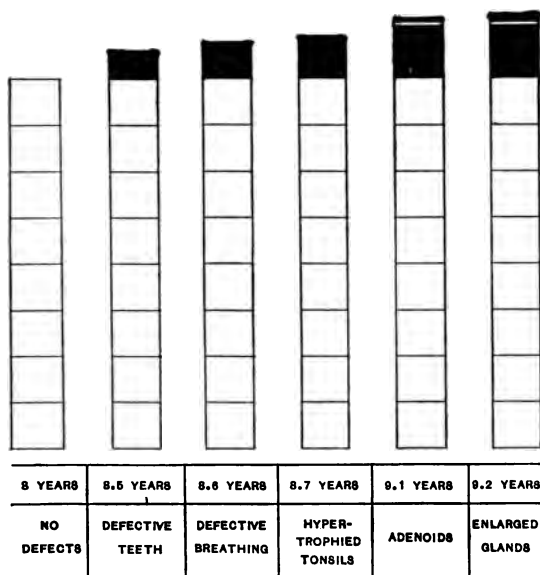
MR. MARTIN.—I find it hard to follow you, sir; but if there is actually any ground for doubting the wholesomeness of our schools, as a member of the school board I want to know it. If my five children are likely to be physically handicapped through the very process of education I want a chance to think that over, too.

MR. ROSS.—Now, before we let ourselves be carried off our feet by Mr. Young's enthusiasm, let us question a little the purpose of our schools. It is to teach, isn't it? Is it not stretching matters a little to demand that the schools should add to their already great responsibilities the care of the children's health? Let the schools stick to their task of teaching which, with no disrespect to anyone present, I may say they do none too well.

MR. YOUNG.—Does Mr. Ross realize that one of the greatest single factors in keeping down the efficiency of our schools is the never-ending stream of absence, from which no class is free, and that absence in turn is largely due to sickness? If we are teaching none too well, which I grant, it is, partly at least, because we are teaching none too likely children. The sick absentees and the ailing children present are too often the pacemakers for their classes. It is not an inspiring idea. If, as Mr. Ross says, the business of the schools is merely to teach, our town will certainly not get its money's worth of teaching until the schools demand that the

human material sent to them to work on is in as good condition as modern science knows how to make it.

DR. LATTA.—That is far from being the case at present. Investigations under the Russell Sage Foundation



THE HANDICAP OF PHYSICAL DEFECTS.

The diagram shows the number of years required by defective and non-defective children to complete the eight elementary grades; according to data collected and published by the Russell Sage Foundation.

indicate that not less than 60 per cent. of American school children are handicapped by removable physical defects, and that, as a result, they are making 9 per cent. slower progress in their studies than they should. Children with seriously defective teeth, according to these investigations, fall six months behind in eight

years. Half the school children of the nation—ten million—have bad teeth. Children with adenoids require a year and a month of extra schooling to complete eight grades. One-eighth of our twenty million children have adenoids. Children with enlarged glands require a year and two months over time. Nearly half of our children have enlarged glands. How much longer are we going to tolerate this enormous and unnecessary waste of time and educational effort, to say nothing of the vitality of the children?

MR. ROSS.—Oh, doubtless children attending school ought to be kept in sufficiently good health to prevent them from wasting their time or that of their teachers and classmates; but it is for parents and health boards to see to this, and not for the schools. Give teachers any discretion in these matters, and they will begin to usurp the authority of the home. They will soon be directing us when to put flannels on our children and what to give them for breakfast.

MRS. ROSS.—I, for one, should not object to such consultations with my children's teachers. They care for the children through as many waking hours as I do myself. If they do not understand the physical care of children they ought to, for the children don't leave their bodies at home.

MISS PARSONS.—I think that all these vexed details of what is to be expected of the schools and the teachers will clear themselves if we return to the question Mr. Young proposed, "Are education and health incompatible?" I haven't the least idea that they are, if we have the right idea of education. But if, as I suspect, our present form of education is not compatible with health, must we not ask what is the great purpose of education, and how are our schools failing to serve it?

The schools, as our special instruments of education, should undoubtedly provide or insist upon whatever makes for the best education, whether the necessary factors are arithmetic books, baths, soups, or surgical operations.

MR. ROSS.—What is the best education nowadays? It used to be a thorough knowledge of the three R's, the purpose being to enable children to get along.

MISS PARSONS.—Is not the purpose of education far more than that? Is it not to bring a human being to his highest possible state of healthful vitality and efficiency and human sympathy for the sake both of his own welfare and happiness and that of the community?

MR. ROSS.—That is a beautiful thought, Miss Parsons, but it is too much for a school to undertake. It requires educated ancestors and parents and money even to approximate such a product of sweetness and light. Neither physical nor spiritual perfection can be turned out by the gross from a public school.

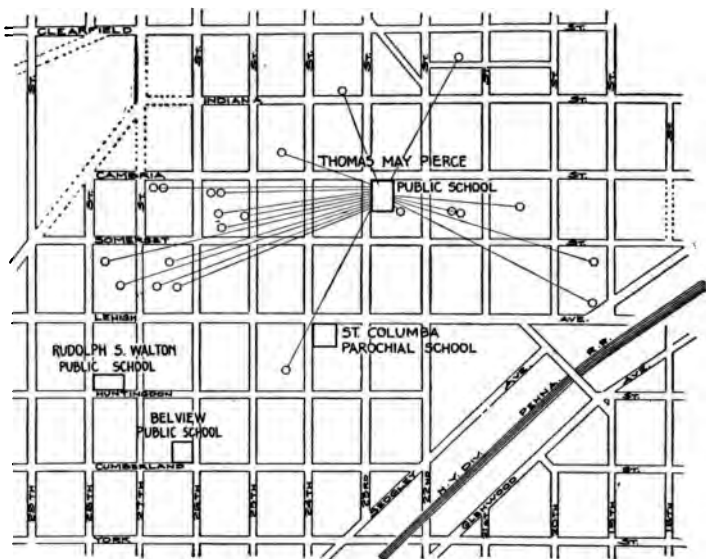
MISS PARSONS.—But at least the product should not fall short of the Maker's pattern. If our schools cannot produce saints, or Samsons, they should, at any rate, graduate well-disposed, intelligent children, who are healthy.

MR. MARTIN.—Who knows that they do not? We are ready for some facts in this interesting discussion. Does our form of education damage our children, or does it not?

DR. LATTA.—It does damage some of them, sir. Besides tolerating defects that could and should be removed, it produces certain ones. The impairment of vision, for instance, begins everywhere in the lower grades and continues increasingly to the top. These imperfect eyes which the schools are making are the source

8 HEALTH AND THE SCHOOL

of many constitutional ills that are not taken into account in public health reports. Headache, indigestion, nervousness, lassitude, and general misery are the price that a large number of our children are paying for the privi-



A PUBLIC SCHOOL MAY BE A CENTER OF INFECTION AS WELL AS A CENTER OF INSTRUCTION.

Every one of the twenty-two cases of scarlet fever indicated by the small circles was associated with the same school. Other schools in the same neighborhood were free from infection. This epidemic in Philadelphia was stopped when medical inspectors located the scarlet fever carriers in the Thomas May Pierce school and put them under quarantine.

lege of going to school and abusing their eyes. The eyes, moreover, are not the only organs that are injured in school, though the unscientific health inspection reports of many cities indicate nothing else.

The backs that are twisted and bent by false positions and ill-adjusted desks are not usually mentioned. Nor is the connection often admitted between the annual crop of acute diseases and the schools that cause and foster them; the fatal diseases of the respiratory organs, caused by bad ventilation and wrong systems of heating, and the inevitable contagious diseases that every mother expects to invade her home as soon as the eldest child enters school.

Do you know why I aim to be back in my office every year at the opening of school? For the reason that then the harvest begins, to keep up with little abatement till school closes in the summer.

MRS. ROSS.—Has not the cold weather of these months as much to do with the increased sickness of the children as their school attendance, Dr. Latta?

DR. LATTÀ.—Only in this way—that, as soon as frost comes, the windows in the schools, and in many of the homes, too, are practically sealed up. The children are forced to breathe unwholesome air, and the germs do the rest. The winter months should be the most healthful of all the months in the year. The cold, clear air, free from many of the summer germs, is the best tonic we know, but we grudge it to our children both in school and home.

At this point let me say that we must not lay all the ill health of our children to the school. The home is quite as responsible for it, and should come in for its full share of investigation; for, if there is one place less scientific than the school, in the care of children's health, it is the average home.

MR. MARTIN.—Returning to what Dr. Latta said of the medical inspection reports, his remarks seem to me to have little bearing on our local health question, since

we have no medical inspection in our town. For aught we know the condition of our school children is better than that of children in other towns.

MR. YOUNG.—True—and, for aught we know, it is worse. We ought to know whether it is or not. We cannot let civic pride take the place of information on this subject.

MISS PARSONS.—Is not the purpose of our club to gather and use just such information? Shall we not arrange with the help of competent physicians to find answers to the following questions:

1. What is the present physical condition of our school children? How can it be improved?
2. What are the conditions under which the children are living and working in home and school? How can these conditions be improved?
3. How can we enlist the teachers, the parents, and the children of this town in a children and health forward movement?

MR. YOUNG.—You have offered us a valuable program, Miss Parsons. In carrying it out our club will render a great service to the town. As our time for closing is at hand, I will sum up in a few words the result of our evening's discussion:

Dr. Latta has made it clear that education, as it is now conducted in the public schools, is actually incompatible, at many points, with the health of our children. Not only are the schools failing to foster and develop health, but to some extent they are undermining it.

There seems further to be an agreement on these fundamental matters:

That the aim of education in school or home is to prepare adequately for an efficient and well-poised life.

That health is an indispensable factor in such a life.

That there is no duty more pressing in the school or home than that of securing the best health possible for children.

SUGGESTED READING

ALLEN. *Civics and Health.*

AMERICAN SCHOOL HYGIENE ASSOCIATION. PROCEEDINGS OF THE FIFTH CONGRESS. *What Our Cities Are Doing for the Health of Our Children.*

GULICK AND AYRES. *Medical Inspection of Schools*, 1913.

HOGARTH. *Medical Inspection of Schools*, Chapters III-VI.

RUSSELL SAGE FOUNDATION.

Money Cost of Repetition Versus Money Saving through Acceleration.

The Relation of Physical Defects to School Progress.

II

HEALTH CENSUS OF A SCHOOL

MR. YOUNG.—“The schoolboy with his shining morning face” has stood for generations as a symbol of the happiest, healthiest life in the world. How does this child of the poet’s fancy stand up under scientific investigation? What is his status in our town? We have been making a few inquiries about the shining apparition. Miss Parsons will report the result.

MISS PARSONS.—I shrink from saying anything to take the shine off; and were it not for the hope of converting the poet’s fancy into actual truth I should much prefer to cherish, undisturbed, the illusion of his highly vitalized schoolboy. As a matter of fact, however, we have found few traces of this boy. Eight or nine in every ten of our school children need either the doctor or the dentist or the oculist.

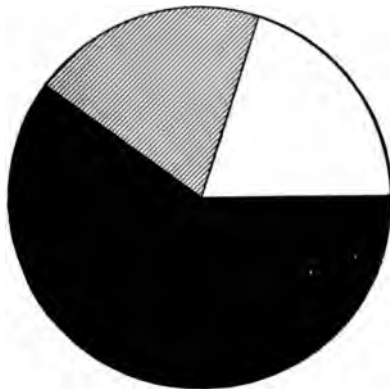
MR. ROSS.—Impossible!

MISS PARSONS.—So I should have said a month ago, but our investigation has left no room for question. It is true that we have thus far investigated only one school, our purpose being to develop experimentally a model for further work in the entire school system; but the Washington school which we chose is typical of all the other schools in town, and for that matter probably of schools throughout the country wherever communities have been as backward in school health matters as we have.

DR. LATTI.—That means almost sixty per cent. of our cities, and even more of our country communities.

MISS PARSONS.—The actual work of examining the children was done by three of our best known and most trusted physicians. After careful consultation they decided exactly what standards of health to follow, just what defects to look for. In a number of cases all three physicians examined the same child, to make sure that all were accurately observing the same standards. I mention the conscientious care taken by these physicians to make it possible for you to believe their incredible report.

The general result of the investigation you have already heard. Almost nine out of every ten children in the Washington school were found in need of treatment. There is, however, a very hopeful side to this dark picture. Most of the defects we found can readily be corrected. Intelligence in their detection and treatment, and, most of all, in their



PHYSICAL RATING OF 20,000,000
SCHOOL CHILDREN IN THE UNITED
STATES.

The dark section represents 12,000,000 children (60%) who have defects so serious as to interfere materially with their physical growth and to retard their school progress by from 6 to 15 per cent. The shaded section represents 4,000,000 children (20%) who have less serious defects. The white section represents 4,000,000 children (20%) who are physically sound. [According to data published by the Russell Sage Foundation.]

14 HEALTH AND THE SCHOOL

prevention, can easily free the children from them, and keep them free. That makes our duty toward these children very clear.

Of the 468 children examined 412 needed treatment for one or more defects. The defects themselves numbered 879, which showed an average of 2.13 defects to each child needing treatment. The distribution of defects was as follows:

CHILDREN FOUND NEEDING TREATMENT *

468 CHILDREN EXAMINED

DEFECT	NUMBER OF CHILDREN NEEDING TREATMENT	PERCENTAGE OF WHOLE NUMBER EXAMINED
Defective Vision.....	144	30.7
Defective Hearing.....	6	1.2
Defective Nasal Breathing, including Adenoids.....	138	29.4
Hypertrophied Tonsils....	116	24.7
Enlarged Glands.....
Pulmonary Disease.....	1	0.2
Cardiac Disease.....	12	2.5
Nervous Diseases.....	1	.2
Orthopedic Defects.....	22	8.9
Anæmia.....	77	16.4
Malnutrition.....	21	4.4
Defective Teeth.....	318	67.9
Defective Palate.....	3	.6

MR. ROSS.—May I interrupt the proceedings to inquire whether having all these modern defects is as

* Based upon a report of the New York Bureau of Municipal Research: *A Bureau of Child Hygiene*, September, 1908.

bad as it sounds? Why should we be so concerned about them? Toothaches and growing pains and other such uncomfortable things are necessary incidents to childhood. We all had them once, but they soon passed by without any medical treatment.

DR. LATTA.—Too many of our childhood friends passed by, too, without medical treatment, Mr. Ross. The graveyards are full of them.

MR. ROSS.—But the children who died had something the matter with them, Dr. Latta. It took a fatal disease to remove a child in my day. Little walking defects that don't keep children home from school aren't going to carry them to the churchyard, are they?

DR. LATTA.—Not at once, Mr. Ross, but they lead the way. Scores of children will die this year in our town, and most of them will have a record of little defects neglected.

A decayed tooth is not so bad as a decayed appendix, but it is constantly filling the whole alimentary system with putrefactive germs. An adenoid is not so deadly as pneumonia, but it does reduce the air supply, which prevents the blood from discharging its poison. It thus invites pneumonia and the whole collection of respiratory diseases. When the fatal disease you spoke of is looking for a victim, what likelier one can it find than a young constitution struggling under the handicap of un-aerated blood or an alimentary canal full of decay?

MR. ROSS.—That is the sort of thing I wanted you to bring out, Dr. Latta. Do you actually believe that there is a very close connection between these slight defects and the serious diseases?

DR. LATTA.—I know it, sir.

MR. ROSS.—Then let us hear more about them and how to rid the children of them.

MISS PARSONS.—How to rid the children of their physical defects is, of course, one of our great problems. How to prevent defects is a still more important one. We are beginning with the first problem in the Washington school, and succeeding beyond our hopes. At a later meeting we shall tell of our methods and results. You will now want to hear something about the nature of the defects that were found. Dr. Latta will give us a brief account of them and of their constitutional results.

DEFECTIVE TEETH

DR. LATTA.—You see by the table which Miss Parsons has just shown you that the greatest number of defects found are in the children's teeth. Defective teeth are of two kinds, malformed and decayed. I might add a third kind, missing teeth, which are pitifully numerous. Whatever is wrong with the teeth, whether it be malformation, decay, or absence, interferes with their prime business, which is to chew food, and with the aid of the saliva partially to digest it. To swallow food that is not thoroughly masticated imposes an enormous strain upon the digestive organs, which never fail at some time to exact their reckoning.

The first mentioned tooth defect, malformation, often does more than interfere with chewing. Protruding teeth, which keep the mouth from closing, besides making proper mastication out of the question, prevent nasal breathing—the only right way of breathing. Aside from hygienic considerations, deformed teeth are an intolerable social offense as well as a mortifying and unnecessary handicap to their possessors. We should not compel our children to view such unsightly defects

among their companions, and we should certainly save the unfortunate children who have them from their socially demoralizing effects.

MR. MARTIN.—Is there any help for bad cases of protruding teeth?

DR. LATTA.—Assuredly. A good orthodontist can completely make over the shape of a mouth; but unfor-



PHYSICAL COMELINESS A PERMANENT ASSET.

Every child has a right to be relieved of the unnecessary handicap of removable physical defects such as distorted jaws and teeth. The drawing shows results actually brought about by an expert dentist.

tunately the technique of teeth-straightening is not given much attention in most of our dental colleges and there are few men really skilled in the art. On the other hand there is no defect in teeth that is easier to avoid by preventive measures than the unnatural protrusion of the upper teeth. I shall say more about this matter when I speak of adenoids.

Decayed teeth need little description. When the decay is advanced, they proclaim themselves by their offensive odors and are easily recognized by any one who takes the trouble to look at them. I have already alluded to them as serious sources of intestinal infection. Few people, however, realize that they are. Everybody is a little careful not to eat decayed food if he can help it, but what earthly good comes of this precaution when decay is already present in the mouth?

MR. ROSS.—Only today I happened to hear that the best professional ball players put the same value on sound teeth that you do. The manager of one of our leading teams has announced that he intends to take a dentist along with him on his annual Southern training trip. He says he has found that most of the stomach troubles which bother young players are entirely due to poor teeth.

DR. LATTA.—Those men know they can't play good ball with poor teeth. Let us see now what happens when decay goes so far as actually to destroy the teeth.

When a deciduous or baby tooth goes prematurely, the result is often shown in a malformed jaw and imperfect second teeth. That is bad enough, but when a permanent tooth is lost its owner has parted forever with a good-sized block of his vital securities. Undue work is thrown on his other teeth, the teeth in his impaired jaw are thrown out of bearing, his whole mouth is crippled, and he limps when he chews. The stomach complains at this unfair arrangement and retaliates in the form of dyspepsia.

"If I were asked to say whether more physical deterioration were produced by alcohol or by defective teeth, I should unhesitatingly say defective teeth." This is the declaration of Dr. Osler, a world-wide medical

authority. Sixty-eight per cent. of the Washington school children are now suffering such physical deterioration. Bad teeth should be tabooed in our schools, as is the presence of head lice. The latter infection is counted a disease and disgrace; but does it compare either in offensiveness or danger with the disease and disgrace of rotten teeth that are poisoning their possessors and filling the air with intolerable odors?

MR. MARTIN.—Your words give me great concern, Dr. Latta. I shall send all my children to the dentist to-morrow, and yet, if I were to do that every time their teeth bothered them, I couldn't afford to keep them in shoes. Dentists are too great a luxury for most people. How are the unfortunate 68 per cent. in the Washington school going to have their teeth attended to without cutting down their supply of oatmeal and overcoats?

MR. YOUNG.—You have brought up a very serious problem, Mr. Martin. The present cost of dental work is indeed prohibitive for the great majority of people. It will have to be adjusted before we can expect our school children all to have good teeth. It is a question with which our club must some day grapple.

DR. LATTA.—In the meantime children can help themselves out wonderfully by keeping their teeth clean. If the teachers and the parents had seen that they were doing this every day, there would not have been 68 per cent. of children with bad teeth in the Washington school.

DEFECTIVE EYES

Dismissing the question of teeth for the present, we will turn our attention to eyes, which you noticed stood second in the list of defective organs found. Many of

these eye defects are very simple, easily detected and corrected. The inconvenience and misery that they cause are indeed out of all proportion to the ease with which they can be removed or prevented. There are four main defects of vision that give almost all the trouble. These are: *short-sightedness* (myopia); *far-sightedness* (hypermetropia); *astigmatism*, an irregularity in the cornea, resulting in uneven and blurred vision; and *weakness* of the eyes, due to over-use, or poor lighting and print, or low constitutional vitality. These are all alike in their results on the children. They all cause a nervous strain which shows itself in various ways—headache, stomach trouble, lassitude, irritable temper, and general nervousness.

The effect of correcting eye troubles is almost magical. It is not unusual for a disposition which has been the parents' despair to be completely transformed, simply by lifting the unconscious strain from the long-suffering child. There is no treatment that can be given to school children with such ease and at the same time with such valuable results as correcting and preventing eye defects.

ADENOIDS AND HYPERTROPHIED TONSILS

Next on the list, only 1 per cent. below defective vision, comes defective nasal breathing. This in most schools reaches a higher percentage than does defective vision, and it is even more serious in its consequences. Defective nasal breathing is almost always due to the presence of the much-talked-of adenoid; and that intruding nasal growth, along with the hypertrophied tonsil, is the bane of the primary schoolroom, afflicting the younger children far more generally than the older ones.

You observe in the table that the cases of hypertrophied tonsils were only slightly fewer than those of defective nasal breathing. The two defects very often go together, and when they do they keep their victim half stifled.

This is the day of fresh air agitation. We hear much about sleeping porches, open-air camps, and even outdoor schools, but the child with adenoids cannot breathe the fresh air when it is offered to him. The adenoids in the nasal cavity partly or wholly cut off the supply of air through the nose, which throws the business of inhaling air upon the mouth, a function for which the mouth was never intended.

MR. MARTIN.—Why not? I've heard much about the evil of mouth-breathing, but why is it really so bad?

DR. LATTA.—In the first place, it is a constant strain and discomfort to force air through the mouth, and the inhalations are ordinarily not so deep as when taken through the nose which, of course, means a reduction of the air supply. Put a clothes pin on your nose for five minutes and find out for yourself some of the discomforts and limitations of mouth-breathing. The most tangible evidence of the harm of this practice is the surely resulting distortion of the jaws, especially the upper jaw, and indeed the entire face. The unfortunate children and grown people, too, whom you see with protruding upper teeth and jaws, are almost invariably victims of the mouth-breathing habit.

MR. MARTIN.—How can such a simple thing as holding the mouth open cause a change in bony structure?

DR. LATTA.—Very easily indeed. A little pressure constantly applied to a growing bone can modify its shape greatly. When the mouth is closed the cheeks and tongue and lips are all exerting normal and balanced pressures upon the jaws. When the mouth is open the pressure

of the lips and the tongue is removed, the cheeks only continuing to press from either side. This results in the narrowing and protruding of the upper jaw, and to some extent, of the lower jaw, a phenomenon with which you are all painfully familiar.

To continue now with the causes of defective breathing, when enlarged tonsils are also present they further obstruct the inhalation of air, and the process of breathing, which should be a delight when it is conscious at all, is a dull chronic misery. Children with breathing thus impaired show all the symptoms of partial suffocation, sluggishness of mind and body, pallor, nervousness, and a general feeling of ill will toward their companions and surroundings.

Normal growth cannot go on when the blood lacks the normal amount of oxygen, and unless the obstructions to breathing are removed or outgrown their victims never reach full stature. In addition to those serious constitutional derangements, adenoids and enlarged tonsils bring about definite diseases. Their congested tissues are excellent pastures for germs. Colds and sore throats in steady procession visit the adenoid child, who is thus a constant source of infection to his school mates.

While all these results seem bad enough, perhaps the very worst effects of obstructed breathing appear in the minds and characters of the affected children. It is hard for children with obstructed breathing to be good. In fact, the proportion of nose and throat defects among delinquent children is invariably much higher than among well-disposed children. One school principal of my acquaintance, when a child was sent to his office for discipline, made it his regular practice to look first into the child's mouth. He rarely failed to find the tell-tale tonsil. He does this no more, however, for,

by enlisting the interest of the parents, he succeeded in ridding his school of both adenoids and enlarged tonsils. The problems of discipline were removed at the same time.

The four kinds of defects we have thus far discussed, those of teeth, eyes, nose, and throat, not only on account of their seriousness, but on account of the great numbers in which they occur, are those of the greatest importance from the standpoint of the school. They moreover come easily under the control of school authorities, as their corrective treatments are in general simple, and not likely to be much hindered by parental opposition. It would be well to add the caution, that, while the removal of adenoids and tonsils involves but simple operations, it is of the utmost importance that these be skillfully done. No operations should be urged upon school children unless it is made sure that they will be in charge of competent specialists.

The other defects in our list, while much fewer, are not slight ones either from the standpoint of the school or of the affected children. The school cannot afford to drag along one child whose power is impaired through needless disease, and not one child can afford the unnecessary burden.

ANEMIA

The next disease on our list, anemia, is a scanty or impoverished condition of the blood, which shows itself by an unnatural pallor. It produces constitutional symptoms like those caused by adenoids and defective eyes. Weakness, pains in the head, poor sight, and impaired digestion are the trials of anemic children. Work and play have little joy for them, and mere living is an effort. Cases of anemia that are not caused by organic

disease can be cured and prevented by supplying the right living conditions—proper food, air, and rest.

ORTHOPEDIC DEFECTS

The orthopedic defects come next, with a record of 9 per cent. Curved spines are the chief orthopedic



AS THE TWIG IS BENT.

School desks that are too high or too low cause mishapen spines.

troubles that appear in schools. Many of these twisted backs are caused by wrong school conditions, ill-fitting desks, over-prolonged desk work, carelessness of posture, and neglect of exercise. The school should give special regard to orthopedic defects, with a view not only to their cure, but more particularly to their prevention.

The school years, which are the growing years, make or mar the body. Like a young tree, a child's back is taking on its permanent shape. It can easily be modi-

fied at this time, and to let it settle into a false curve is to do the child irreparable injury. He loses not only the possibility of ever attaining a fine posture and bearing, a most important factor in his future success and happiness, but he suffers a permanent impairment of health. No vertebra can remain turned or slipped from its proper place without setting up an irritating pressure on nerves or organs, which results in a life-long nervous strain, if not in actual organic disease.

Defects of feet, particularly flat-foot, due to a weak or broken-down foot arch, are a condition too seldom recognized among school children. So-called growing pains in instep, sole, ankle, knee, or hip are often symptoms of flat-foot. The condition requires thorough investigation and the advice of a specialist, as chronic discomfort, stiffness, and weakness, with attendant nervous strain, are the consequences of neglecting or wrongly treating this defect.

MALNUTRITION

Defective nourishment is next on our list. Our schools as now organized cannot be held accountable for this trouble, as they can for orthopedic and eye defects, but they should take note of all cases and set the proper agencies at work to cure them. Some cases of malnutrition are due to actual disease, and should be kept in the hands of doctors. Many are due to poverty, and these should be handled for the time being by charity organizations. Many, however, are due to mere ignorance of parents as to the right diet and hygienic habits for their children. It is with such cases that the school could and should wield a strong and beneficial influence.

CARDIAC DEFECTS

Heart troubles are found in small numbers in most schools; the proportion in the Washington school being 2.5 per cent. Children having such defects should be pronounced upon by an expert and have their activities regulated under his advice, as certain forms of play and exercise, normal enough for normal children, often cause the affected children great harm.

DEFECTIVE HEARING

Deafness we found in 1.2 per cent. of the children. This trouble is often caused by catarrh of the middle ear, which, if neglected, may develop into mastoiditis, a dangerous inflammation in the bone behind the ear. Deafness is also caused by the presence of adenoids, and may be corrected by their removal. Nothing should be left undone to relieve children of defective hearing at the earliest possible moment. It may soon become too late.

DEFECTIVE PALATES

Cleft palates were found in three children, these being 0.6 per cent. of the entire number. Skillful surgical treatment is the only help for unfortunate cases of this kind, and little can be done even by surgeons after infancy.

PULMONARY AND NERVOUS DISEASES

Any form of either pulmonary or nervous disease is serious and difficult to handle. Children suffering from such a disease should remain away from the ordinary school until cured.

ENLARGED GLANDS

Swollen glands were among the defects we looked for. Though we found many cases of slightly enlarged glands, none was serious enough to report. In most cases enlarged glands are symptoms of other defects, such as bad teeth, hypertrophied tonsils, and pediculosis (head lice). The glands return to their natural size and condition as soon as the causal defects are removed. Glandular enlargement must never be overlooked, however, as it is always an indication that the bodily nutrition is being interfered with, and that the poisons which accumulate in the tissues are not being properly disposed of. This state of the glands furnishes exactly the right soil for tuberculosis. When glandular enlargement continues and increases it usually means a serious case of this dreaded and dangerous disease.

SUMMARY

This completes the list of physical defects which we selected for the test of the Washington school children. The list is extremely conservative. To avoid opposition to the experiment, we omitted several defects which should properly have been included in it, such as mental deficiency, defective speech, non-infectious skin diseases, hernia, and phimosis—a constricted condition in boys, curable by circumcision, and likely to produce nervous derangements as well as hernia if neglected. Our survey also took no account of the minor contagious diseases which we incidentally met in great numbers—pediculosis, ringworm, scabies, impetigo,—nor of the venereal diseases sometimes found among school children. All

these defects and diseases of school children, together with the best ways of discovering and handling them, have been described with great clearness in several recent works to which I shall refer you.

The list of defects which we have considered to-night, though only partial, is long. You have seen the serious consequences involved in letting them go uncorrected, and at the same time you have seen how easily removed or prevented many of them may be. Do you think the school, which is responsible for many of them and handicapped by all of them, can any longer afford to ignore them? Must it not use all its influence and authority to secure their removal and prevention?

SUGGESTED READING

ALLEN. *Civics and Health*, Chapter VI.

AMERICAN SCHOOL HYGIENE ASSOCIATION. PROCEEDINGS
OF THE FOURTH CONGRESS *Contagious Skin Dis-*
eases in Relation to Schools.

HOAG. *The Health Index of Children.*

HOGARTH. *Medical Inspection of Schools*, Chapter
XVI.

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. *The*
Ninth Year Book. Part I, *Health and Education.*

III

SANITARY INSPECTION OF A SCHOOL BUILDING

MR. YOUNG.—What ails our children? When we heard that question answered at our last meeting we were all thoroughly shocked. There is another question fully as urgent. Its answer is no less shocking. What ails our school buildings? Mr. Martin will explain.

MR. MARTIN.—It is a penance for me to give an answer, for I am in a measure responsible for the condition we found at the Madison school. For five years I have been on the school board, and not till last month did I know, or know enough to care, what condition our buildings were in. It is true that I did not chance to be a member of the committee on buildings, but that was no excuse.

When we came to examine the Madison school building, outside and inside, with respect to its site and surroundings, its heating, ventilating, lighting, sanitary appliances, and care, we made the following discoveries*:

The *building* is a two-storied frame structure with no fireproofing, but with ample outside fire escapes. Its location is bad, being near a gas plant which constantly fills the air with unwholesome odors.

* Based upon an investigation of the sanitary conditions of a school building, by W. E. McGowan, reported in the *Pedagogical Seminary*, December, 1910.

The *ground* on which the building stands is low and ill-drained, which makes the fair-sized yard unfit to play in during much of the year. Part of the yard is fenced off for lawn and shrubbery; the ornamental effect thus secured being paid for by the children in narrowed space for play or gardening.

The *heating* of the building is by means of the hot-air gravity system, the warm air inlets being in or near the floor. We found the heating system to be effective, so far as temperature was concerned. The thermometer stood at about 70 degrees in all the schoolrooms, and the teachers reported little trouble, even in zero weather.

Getting air heated, however, seems to be a far less important matter than keeping it sufficiently fresh and moist. It is an easy thing for children to exercise or put on wraps if they are cold, but they have no protection against air that is poisoned, or so dry from heating that it blisters the delicate membranes of nose or throat. It was in its failure to assist the ventilating system that the heating system in the Madison school broke down.

Ventilation has been a general theory for many years; a general practice never. We found it in its theoretical state in the Madison school. At one time a ventilating system had been installed and then forgotten. This system still stands as our fathers left it. It was not working when we saw it, never had been working, and the janitor did not know of its existence.

The system included an outlet flue in each room. These flues were for conveying foul air into a central chimney—too small for the purpose—which had been used as a smoke flue when the building was heated by stoves. Our anemometer tests, taken with windows both open and shut, showed that no foul air was being conveyed through the outlet flues to the central chimney.

We discovered the reason for this total failure of the outlet flues when we inspected the bottom of the chimney in the basement. Set in the base of the chimney was a stove which once had been put there to furnish an upward current of air. The stove had never been used; the janitor did not know what it was for.

In many rooms we found slightly opened windows, which gave an appearance of good ventilation, but an appearance only. Our anemometer tests showed that the quantity of fresh air admitted into the rooms fell far short of the amount required by our State school regulations governing the construction of new buildings. This is 1,800 cubic feet per hour per pupil. The greatest amount of air admitted in any room in this school was 1,100 cubic feet.

With the ventilating system in the dormant condition just described, the only way that good, as well as warm air could have been provided in the building would have been through a miracle. No miracle had taken place when we visited the school, and the air was what might have been expected—intolerable.

MR. ROSS.—I should like to ask just how you were able to find that out. Was it by the odor of the air? There is, of course, always an odor in schoolrooms and children's institutions. This seems harmless enough, and it cannot be avoided where you have so many children together.

MR. MARTIN.—I do not agree with you there, but the odor in this case, I assure you, was quite sufficient to indicate the bad quality of the air. We did not depend upon that, however. Our conclusions regarding the amount of organic matter in the air were based upon the amount of carbon dioxide (CO_2) which it contained. The excess of CO_2 in air that has been breathed is a very

accurate index of the amount of organic matter that has been exhaled. We measured the proportion of CO_2 in the air very carefully by the Petterson-Palmquist apparatus, which registered an amount greatly exceeding the present generally accepted limit for health; i. e., 10 parts in 10,000 of air. Our tests showed that the proportion of CO_2 in the school air increased steadily after the opening of school to 20 or 24 parts per 10,000. The pupils were breathing what would be technically ranked as bad or very bad air throughout their school day. As these tests were conducted in weather moderate enough to allow of the windows being partly open all day, it is interesting to consider what condition the air of that school reaches in really cold weather. At this point I must admit, however, that, according to recent experiments, the CO_2 test is not an altogether infallible index to the wholesomeness of air. We will discuss this question more fully later.*

There is a further factor necessary to air that meets modern standards and as to this the experts leave us in no doubt. It is moisture, a condition fully as important as purity. Heated air has to be humidified.

MR. ROSS.—Oh, come, Mr. Martin, isn't that carrying a fad too far? They will want us to perfume the school children's air next. We all know that damp air is deadly.

DR. LATT.—Not so deadly as air that is too dry, Mr. Ross.

MR. MARTIN.—I confess that when humidity as a factor in ventilation first came to my attention I thought the emphasis which some of the school agitators placed upon it was rather far-fetched. Why good, dry air should be made artificially damp was more than I could see. When scientific facts clash with opinions, however,

* See page 46.

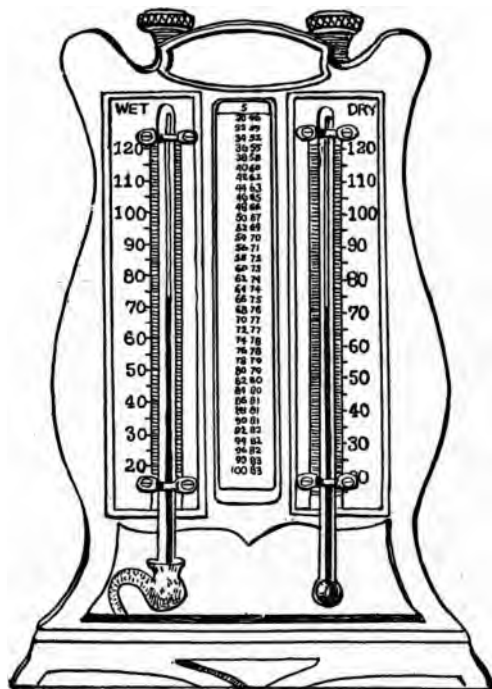
it is the opinions which have to give way, as mine have now done. I learned that eggs in an incubator never hatch unless the air is humidified to the right degree; that even cactus plants succumb to the air of our furnace-heated houses. I noticed that my children wilted like cut flowers when they were kept indoors a single whole day in the winter, though the air in our house is fresh. Then I concluded that there was some point to all the recent humidity agitation.

MR. ROSS.—I don't understand this at all. How can house air in the winter be so much drier than outdoor air? The air we have in the house all comes in from outdoors, doesn't it? Why doesn't the moisture stay the same?

MR. MARTIN.—When air is heated its capacity for moisture increases enormously. Unless additional moisture is supplied artificially the relative humidity becomes very low, and the air absorbs whatever moisture comes in its way. In our houses such moisture is supplied principally by the membranes of our noses, throats, and lungs. Not being constructed for this purpose, the membranes become parched. The results are colds, sore throats, and universal catarrh. My children have never been free from these troubles during cold weather. Experiments have conclusively proved that it is not the winter weather but the roasted indoor air of winter that gives the germs their chance.

Humidification of air was a foreign thought to the janitor of the Madison school, and we accordingly found nothing of the sort being done. The lack of moisture in the air was made evident by our hygrometer tests, which showed the amount to be only 24 per cent. Ordinary outdoor humidity is not far from 60 per cent. Indoors it cannot go below 40 per cent. without serious

harm resulting. What do you suppose is the effect when the percentage of moisture has shrunk to about half the minimum limit for health?



HYGROMETER.

This instrument for measuring the amount of moisture in the atmosphere should be part of the equipment of every school.

Noisome and parching air was what we found in this school. School children in all parts of our country are breathing the same kind of air.

The *lighting arrangements* had been fairly well planned in the construction of the building, the ratio of glass

to floor space being within the very moderate 1 to 6 ratio prescribed by law. The placing of the desks was also proper, except in one room, where the light came from the back instead of from the left, or the back and left, with a preponderance of light from the left.

Aside from these general arrangements, however, no thought seemed to have been given to the important matter of illumination. Though the seats for the most part were rightly set, the children were assigned to them with no regard to the lighting. There were empty seats in the best lighted places, and no effort had been made to seat children with respect to any visual defects they might have.

While the ratio of window space to floor space was within the legal limit, we found that the light which should have been admitted was reduced in several ways. Large trees in the school yard stood near some of the windows, cutting off the light. The windows themselves were all dirty, which materially reduced the illumination. The shades were carelessly adjusted, some being broken and impossible to raise. Some of the windows were filled with plants which absorbed about a quarter of the light. You may wonder how plants could live in the abnormally dry air we found. It was, indeed, only by being constantly soaked with water that they did survive, and this constant soaking of the plants actually increased the humidity of the air in the rooms where they grew.

The *sanitary appliances* and *practices* in this building we found as follows:

The toilet rooms, which were unheated, were placed in a well or shaft inside the building, and illuminated only by skylights at the top of the well. The ventilation was supposed to be carried on through swinging sash windows.

Now, there are four prime requisites for proper sanitation of toilet rooms. These are cleanliness, direct illumination from the sun, ample heating, and a continuous supply of air, preferably by a special system of aspirating chimneys and exhaust fans. These well-known principles of hygienic construction were all being violated in the Madison school building. There was no sun, no heat, no ventilation. The odor from the toilets permeated the whole school.

The drinking and washing facilities evidenced striking disregard of sanitation. The common drinking cup and towel were still in use as they were a generation ago, though it is everywhere known what spreaders of contagion these filthy things are. A recent test made on a common drinking glass from a school showed 100,000 bacteria to a square inch of glass surface, and the upper third of the glass so thickly strewn with skin cells from the lips of the children that a pin point could not be touched to any part of the glass without coming into contact with several bits of skin.

The manner of cleaning a school is of great importance from a sanitary point of view. This can be so done as to result in greater harm than benefit, and so we found it in the Madison school. The floors were bad, rough and full of wide cracks. These collected quantities of dust which came forth in clouds at each sweeping. The janitor was aggravating the trouble by dry-sweeping the halls during school hours, and filling all the classrooms with fine dust. In the mornings before the opening of school he stirred up fresh dust in every room by going over the desks with a feather duster.

Comfortable and proper seating for the children is an important item among the hygienic arrangements of a school. It is a necessity of every school which keeps

up the use of the old-fashioned desk that adjustable desks be provided for the exceptional children who are present in every class. We found no adjustable desks in the Madison school, but we did find tall boys and girls doubled up in little seats, and little children with shoulders and arms uncomfortably propped up by desks too high, and with legs dangling from high seats all day.

MR. ROSS.—What do you mean by your reference to the old-fashioned desk? How can school children get along without desks?

MR. MARTIN.—By having light movable tables and chairs. This arrangement, in the primary rooms at least, has every advantage over the regimental rows of desks which have always been a notable hindrance to the cleanliness of schoolrooms as well as to the comfort and freedom of the children. It is hardly possible to keep a schoolroom floor clean around the legs of stationary desks, which collect dust and germs in every crack and corner; and it is even less possible for children to have any natural physical or social life in a room which is so filled with furniture that they cannot exercise freely or occasionally form little groups. Tables and chairs that can easily be moved aside at any time meet the triple need of a schoolroom—sanitary, hygienic, and social.

I could easily go into greater detail in my report, but the items I have mentioned cover in a general way the extent of our investigation. Our findings I think prove beyond a question Mr. Young's contention, uttered at our first meeting, that the schools are damaging the health of our children.

MR. ROSS.—The conditions you report, Mr. Martin, are scandalous. I should like to know who is to blame for them.

MR. MARTIN.—I am to blame, Mr. Ross, and you are

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to blame, and every one in this room is to blame, as well as every citizen in this town. The Madison school is a public school. The public is responsible for it. If the school board has failed, as it certainly has, to maintain a decent school building, why haven't the 600 parents



LEGAL REGULATION OF SCHOOLHOUSE CONSTRUCTION (1912).

The states in white have complete regulation; those in light shading moderate regulation; those in dark shading deficient regulation; those in black have no regulation at all. [From Russell Sage Foundation].

who are interested in it insisted on proper arrangements for their children? Why have the doctors in this town, who are supposed to guard our health, allowed these disease-breeding conditions to continue? None of us can escape the blame, which is written large in our deficient laws regulating schoolhouse construction.

MISS PARSONS.—Now, however, that the light has been turned on, Mr. Martin, may we not hope to have school conditions improved? When people really find out how

bad things are, they are usually eager to do all they can to right them.

MR. MARTIN.—We have found that to be true, Miss Parsons, and I am glad to report that radical improvements have already taken place in the Madison school. When the principal and I realized what the sanitary conditions and practices in the school really were, we could not rest till we got some changes started.

The principal organized his teachers into a kind of sanitary vigilance committee. He persuaded a children's specialist to show the teachers how to give simple eye and ear tests, and how to seat the children according to the results of these tests; also how to avoid eye-strain from unchanging light conditions by simply having each pupil sit in different parts of the room every day. This physician also taught the teachers how to adjust seats and desks to the size of the children, for I am happy to say that, though chairs and tables are still out of our reach, we have finally persuaded the school board to place 8 or 10 adjustable seats and desks in each room.

After we had the teachers enlisted, we attacked the building. The most desirable treatment for that, obviously, was to tear it down and build a new school house on a new site. That being out of the question, we satisfied ourselves with accomplishing the following results:

Grounds.—We have contracted to have the school yard drained, during the long vacation, and part of it treated with a durable and elastic dressing especially adapted for playgrounds.* The section now covered with lawn and shrubbery will be used for school gardens.

Ventilation.—1. The fire at the bottom of the aspirat-

* For description of surface dressing, see *The Reorganized School Playground*. UNITED STATES BUREAU OF EDUCATION, Bulletin No. 16, 1912.

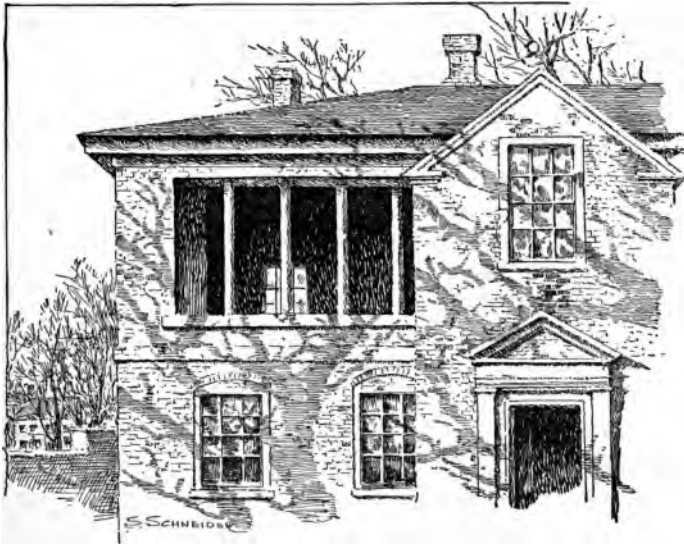
ing chimney has been started and ordered to be kept going whenever windows cannot be kept well open.

2. The janitor and teachers are instructed to have the outlet flues always open and clear.

3. A complete change of air is secured in each room at the end of every hour by opening all windows for a few moments.

4. A number of recitations are held daily as fresh-air classes, and a fresh-air room has been inaugurated, to which anemic children from other schools are admitted.

5. Apparatus for humidifying air has been installed at moderate expense.



LETTING IN THE AIR AND SUNSHINE.

Almost any old building can be transformed into an open air school simply by removing part of its wall.

Lighting.—1. The trees in the yard have been trimmed.

2. The windows are kept thoroughly clean.

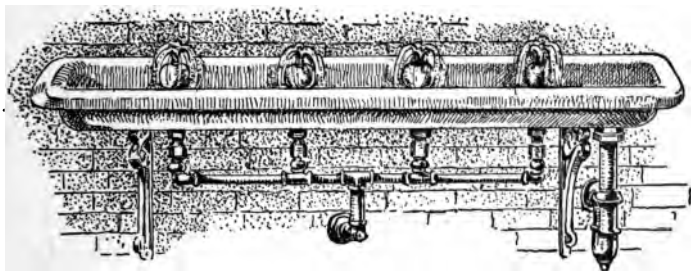
3. No plants are allowed to interfere with the illumination.

4. The window shades are all in working order and intelligently manipulated by the teachers.

5. The children are seated, with reference to simple eye tests, in such a way as to secure their greatest comfort, those with defective vision next the windows, those with myopic or short-sighted eyes in the front seats.

6. The seats that were wrongly placed with respect to the light have been set so that the light falls from the left.

Sanitary Appliances and Practices.—1. The janitor is now required to wash closets and urinals daily with brush and hot water, and at least twice a week with a germicide.



SANITARY DRINKING FOUNTAINS.

Fountain heads can be installed at small expense in place of the old-fashioned faucets and chained cups.

2. Enough artificial light has been installed in each toilet room to allow the cleanliness of the appliances to be inspected.

3. It is planned during the short vacation, to install systems of heating and ventilating in the toilet rooms. Warm air will be used for heating, as this will assist the ventilation. For mild weather a number of inexpensive electric fans will be provided.

4. The common drinking cup has been abolished, and fountain jets put in its place.

5. For the common towel inexpensive Japanese paper towels have been substituted.

6. The floors, in the vacation, will be cleaned, scraped, filled, finished, and waxed. In the meantime the janitor has been prohibited from doing any dry sweeping or feather dusting, or from sweeping any floor during school hours. He is required to have the whole building dusted with damp cloths every day before the morning session, and to have all the floors scrubbed on Saturday.

7. Adjustable desks have been assigned to all the children who needed them, and it is now possible for every child in the school to work with his arms resting in comfortable positions, and with his two feet set squarely on the floor.

Finally, the principal makes a careful and thorough tour of inspection throughout the building each day, to see that the daily sanitary routine is maintained in all these essential particulars.

The greatest result of our two months' work, however, has not been the partial rehabilitation of the miserable old school building. It has been in the improvement of the school children themselves. Miss Parsons and her committee may justly claim to find results from removing the defects of the Washington school children; but it is evident that removing merely the defective conditions in the Madison school has gone far toward trans-

forming its children. Thanks to the fresh, clean, and sufficiently moist air that the pupils are now breathing, and the better light provided for their eyes, the principal is able to report marked increase in energy and success in school work, and problems of discipline reduced about 75 per cent.

MR. ROSS.—We owe Mr. Martin a vote of thanks on behalf of our club, and on behalf of the whole town, for the valuable pioneer work he has done in our school sanitation. His work has shown sanitation to be a very fundamental department of school administration. I for one should like to know much more about it. May I not ask Mr. Martin, in concluding his report, to give us a brief summary of the general standards to be attained in school sanitation, together with a few suggestions as to the best methods of attaining them?

MR. MARTIN.—In our limited time I can hope only to give the most condensed outline, but it will doubtless clear up the subject in our minds to review systematically, though briefly, the general principles touched on in the report just described.

SITE

The site of the schoolhouse should be chosen with a view to obtaining pure, dry air, good light, reasonable quiet, and sufficient outdoor play space. It should, therefore, be on "dry, porous ground, well-drained, free on all sides, distant from any buildings, far from factories, offensive trade establishments, markets, boiler shops, saloons, and elevated railroads, far from anything creating noise, smoke, smell, gases, or fumes."

MRS. ROSS.—May I ask what is regarded as sufficient play space?

MR. MARTIN.—The standard is necessarily a flexible one. London, the most congested city in the world, allows each child 30 square feet of school yard. That permits each child to do little more than swing his arms about him. Many of our large cities do not observe even this standard. In one of our greatest cities 168 of the schools fall below the 30-foot limit, one school in the list having only 1.31 feet per child. At least 145 square feet per child, or an acre for 300 children, is required for active play. Even this apparently liberal allotment falls far short of the need of active boys, who cannot play their favorite running games if more than 70 are allowed on one acre.

CONSTRUCTION

The main concerns in the construction of a building are: safety, light, heating, ventilation, cleanliness, and convenience. While safety and sanitation are quite distinct items and are, indeed, conducted by separate municipal departments, school authorities should keep as close watch on arrangements for safety, especially those bearing on fire prevention, as on those for sanitation. Wood should be avoided as a material for construction, except in the smallest rural schools. The height of the building should never exceed five stories, and wide staircases—44 inches for two files—should make it possible for children to reach the different floors comfortably and rapidly, without the use of elevators. Ample fire-escapes should also be provided, though these should never be regarded as the main dependence of the children against the danger of fire. Fire *prevention*, not fire escape, is the ideal of the modern school, which should be equipped with fire walls and doors to prevent the spread of a fire

that has started; wire glass to prevent the breaking in of windows by flames, and automatic sprinklers in places where fire is likely to start. For the sake of insuring not only fire security, but quiet, cleanliness, and wholesome air; "the walls, floors, ceilings, and partitions should be sound, damp, fire, vermin, and dustproof. The junctions of ceilings and floors with walls should be concave, and all projections, moldings, etc., where dirt and dust may lodge should be eliminated whenever possible." *

Ample provision should be made for dressing-rooms, library, study rooms, auditorium, bathroom, teachers' room, and nurse's room.

The further items of construction affecting heat, ventilation, light, and cleanliness we will take up separately under those heads.

HEATING

The heating system should provide a temperature which insures a maximum of comfort and energy to the pupils. Such a temperature, when air is fresh and sufficiently moist, is reached, for ordinary school work, at the comparatively low point of 65 degrees. The perfection of modern heating systems makes the meeting of this temperature requirement an easy matter. It is in relation to ventilation that the heating system becomes an item of very critical determination.

VENTILATION

A satisfactory ventilation system provides for the introduction and adequate circulation of good clean air in sufficient amount for all the individuals who occupy a

* *Hygiene and Public Health.* Price.

school. The present accepted standards of good school-room air are: CO₂ content, 4 to 10 parts in 10,000; humidity, 40 to 60 per cent.; temperature, 65 to 68 degrees; amount, 1,200 to 1,800 feet per pupil per hour; cleanliness, freedom from dust, smoke, poisonous gases and odors.

As I stated before, the proportion of CO₂ that can exist in air without rendering it harmful is a matter of present controversy. Recent careful experiments have indicated the surprising fact that the CO₂ content in air, instead of reaching the maximum for health at 10 parts, can rise as high as 150 parts in 10,000 and even higher without resulting in physical discomfort or disturbance, provided that the air is circulating freely and does not become too hot or moist.

MR. ROSS.—Then what value had the CO₂ test that was applied in the Madison school?

MR. MARTIN.—As a test for the contamination of the air alone it had little significance; as an indication of the stagnation of the air it was important. Stagnant air has been shown to be uncomfortable and unwholesome, even when it is pure.

MR. ROSS.—I can't see how pure air can be either unwholesome or uncomfortable.

MR. MARTIN.—We have all experienced the condition on a sultry, summer day, when no breath of air was stirring. The outdoor air, though pure, was just as bad as the indoor air. The lack of a breeze was the whole trouble. The body envelope of air which immediately surrounds the body, becomes overcharged with heat and moisture, unless it is being constantly changed by a moderate current of air. A stagnant condition of the air, whether outdoors or indoors, brings on the characteristic symptoms that are caused by bad ventilation. These

seem beyond a doubt to be due to the discomfort of the skin and possibly the lungs, but not to inhaled poison.*

MR. ROSS.—If the skin is all that is to be considered in ventilation, why not simplify matters by installing a lot of electric fans in schoolrooms, and letting the elaborate contrivances go?

MR. MARTIN.—To add electric fans to the schoolroom equipment would undoubtedly contribute greatly to the comfort of pupils, if the fans were so placed as to avoid strong drafts on anyone. I have, in fact, tried the efficacy of the electric fan in “freshening” the air in a room. My stenographer had decided she could no longer endure the oppressive air of my office. Daily headache and lassitude, she felt, would compel her to give up her work. I determined to try the fan. From the first day it was installed, though no other change in the ventilation was made, the stenographer’s bad symptoms disappeared, and now, after several months, she is comfortable and full of energy.

To substitute fans, however, for the standard methods of ventilation would be an unwarranted step in the present experimental stage of the subject. Recent experiments in the Harvard Medical School indicate strongly that there are actual poisonous substances in expired air. The combined plenum and vacuum methods for large buildings, gravity and exhaust system for smaller buildings, and the jacketed stoves with an air flue from outside and a vent, for one-room schools, must be regarded as the approved methods until practical devices have been demonstrated which meet the condition better than do the best ones now in vogue.

It must be remembered that, no matter how perfect a ventilating system may be, it is never the substitute for

* *The Heating and Ventilating Magazine*, February, 1911.

direct outer air that its advocates often claim. If windows must be closed to assist the operation of a ventilating system, these should be opened top and bottom at least once an hour to secure a thorough blowing out of the schoolroom. A sudden drop in temperature is no obstacle to the plan. Children are refreshed by cold that does not last long enough really to chill them.

Two more points must be emphasized with respect to air introduced into schoolrooms. It must be clean, and it must not be overheated or "baked." Outer air that is charged with dust should be filtered or washed. Passing air through a wet gauze screen at the opening of the fresh-air flue is a simple and fairly effective way of cleansing it. Air used for warming as well as ventilating purposes should never be heated to over 100 degrees, as a higher temperature makes it injurious in several ways. Carbon monoxide, a deadly poison, penetrates red-hot iron and enters the air chamber of an overheated furnace. Burning particles of iron and dust contribute disagreeable odors, and other factors not yet plain cause baked air to be harmful. Consequently, hot-air systems not reinforced by direct radiation should be confined to climates that do not require forced heating.

The best standards for good air we may now sum up in a word. Keep air clean; keep it cool; keep it moist; keep it moving.

LIGHTING

In the lighting of a schoolhouse the aim is twofold: to secure as much natural sanitation through sunlight as possible, and to provide enough light to make all eye work comfortable and safe. Every room should be so placed as to allow the sun to enter at some time during

the day, a southeast exposure being the most desirable for this purpose. The main light should come from the left. The proportion of the area of windows to floor space should not be less than 1 to 5. Windows should have square corners, with tops not more than 6 inches from the ceiling, and bottoms not more than 3 feet 6 inches from the floor. When outside light is obstructed window glass should be ribbed or prisms. Windows should be fitted with two opaque shades, rolling respectively up and down from the middle. Ceilings should be white or light buff, and the walls light green or buff. Windows should be kept clean and unobstructed. For artificial illumination electric light is best.

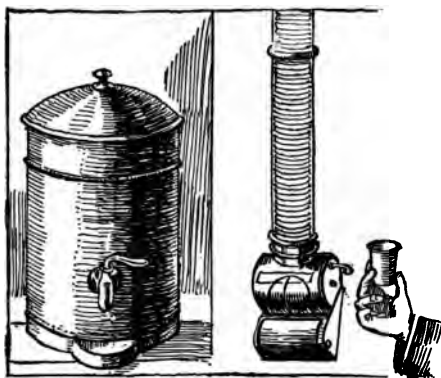
PLUMBING AND DISPOSAL OF WASTE

The purpose of plumbing and the various methods of waste disposal is cleanliness, through the supply of water for cleansing purposes and the removal of offensive and dangerous matter. "There should be ample provision for washrooms, basins, shower baths, urinals, water-closets, all situated conveniently in well-lighted, heated, and ventilated apartments; the fixtures made of porcelain or enameled iron, the floors, walls, and ceilings constructed of stone, tile, or pressed glass. Water-closets should be provided with automatic flush apparatus." * When plumbing cannot be installed and no running water is at hand, the dry earth closet is the most sanitary toilet arrangement. This must receive constant, intelligent care, and should be situated not less than 40 feet from the schoolhouse. When running water is available the septic tank system is a safe and inexpensive method of waste disposal.

* *Hygiene and Public Health.* Price.

DRINKING FACILITIES

Wholesome drinking water should be provided to school children by methods which do not permit the spread of contagion. Unless drinking water comes from an artesian or other thoroughly certified well, it should



COVERED CAN AND INDIVIDUAL CUPS.

Sanitary substitutes for the disease-breeding open water bucket and common cup.

invariably be filtered. If the public water works do not provide filtration, the schools should do this by means of properly adjusted and frequently cleaned filters. In case of demonstrated contamination, water should be boiled 20 minutes. The common drinking cup must give

way to the drinking fountain, when there is running water; or, when water is restricted, to sanitary paper cups or individual cups under the care of the teacher. Water receptacles should be kept closely covered to prevent the contamination sure to result from the use of open pails.

FURNITURE

School furniture should minister to the ease and comfort of school work, and be so chosen and cared for that it cannot produce injury to the pupils through contagion or strain. Desks and seats and tables should be care-

fully adjusted to pupils. They should not be permanently attached to the floor. Blackboards should be of slate, and placed where they can easily be seen by all pupils. The common towel should be replaced by the cheap paper towel which is destroyed after being used once. Pictures, charts, globes, models, and instruments should be coated with varnish, and should be smooth and easily cleaned. Pens, pencils, and books should be used as individual property and disinfected before going into the possession of other pupils.

The last-named articles, and many others like them, while they may be regarded as school furniture, are really materials of instruction, and their control, except as regards their sanitary cleanliness, falls more properly under the hygienic regulation of school activities. Such regulation is a much-needed branch of health supervision. Until the time comes when school activities are regulated hygienically, which is far from the case at present, sanitary authorities must do what they can to secure a wholesome school equipment. It is altogether likely in the future, however, that a department for the regulation of school activities will take over the chief responsibility for school furnishing, as these present many problems quite distinct from those of ordinary sanitary requirements.

CLEANING

Schools are cleaned for the purpose of keeping them free from dust, germs, refuse, and bad odors. Dust is the main point of attack, and *prevention* of dust is the first move to make. The building itself and the articles in its equipment, as we have seen, should all be devised so as to catch and hold the least possible dust. Dusty

outer air, we have already stated, should be cleansed before it is introduced into the ventilating flues.

The most effective method of all for excluding dust, dirt, and germs from schoolrooms, though as yet it is least recognized, is to prevent children from distributing the mud and filth of the streets over schoolroom floors by means of their shoes. The Japanese people, who have adopted our best sanitary standards and retained the best of their own, do not permit street footwear to be worn within their buildings even when these buildings are on European models and their occupants wear European dress. As a consequence of this rule, the floors of houses, hospitals, and schools, when not covered with matting, present the appearance of polished table tops.

MRS. ROSS.—What an enviable condition! Surely dirty shoes are the chief source of dust in our schools and public buildings, not to say private dwellings, but how could you ever arrange to have 500 children take off their shoes before entering a school building?

MR. MARTIN.—The Japanese provide a roomy vestibule where this is done. We could easily solve the difficulty if we became convinced of the sanitary importance of such an arrangement.

In the meantime the warfare against dirt, both preventable and unpreventable, must go on vigorously and continuously. The first requirement in sanitary cleaning is to avoid the raising of dust. The vacuum cleaner answers this requirement most satisfactorily. Sweeping and "dusting" can be made fairly dustless operations, however, by the use of wet sawdust scattered over floors for sweeping, and damp cloths for use in wiping furniture and floors. These should be wiped up every day when rooms are in use. A disinfectant should be used



HEALTH AND HAPPINESS.

Out-door air, movable tables and chairs, and reasonable freedom make for comfort and interest as well as health in the open air classes of the Horace Mann School.

7

not less than once a week. Strong soapsuds alone make an excellent disinfectant.

Floors, to be kept clean, must present smooth surfaces; if they are made of soft wood they should be treated with hardening preparations. Oil as a floor dressing does not deserve the vogue into which it has recently sprung, as, instead of eliminating dirt, it binds the dust on the floor, where it sticks. In fact wood, unless polished and waxed, does not make the most sanitary floor for schools, and we cannot hope to have really first-class wooden floors until we stop the habit of grinding dirt into them with our shoes. Many English schools have floors of small stone blocks set in cement, which are easy to scrub, comfortable, and soundproof.

Window Cleaning.—Window cleaning, as we have seen, is of great importance. The frequency with which this is needed varies much, according to location, climate, and season, but a schedule should be followed which is carefully regulated with a view to keeping the glass constantly clear.

This finishes the list of general items to be considered in the sanitation of school buildings. Two main purposes are back of the entire program, determining every item on the list. They are *comfort* and *cleanliness*.

MR. YOUNG.—After hearing this excellent summary of modern sanitary standards and realizing the distance which most of our schools must travel to reach them, I am tempted to paraphrase Portia's words—If to do were as easy as to know what were good to do, chapels had been churches and poor men's cottages *sanitary schoolhouses*.

MISS PARSONS.—And why shouldn't they be? The twentieth century man does not spend his life in wistful desire. To know what were good to do is the modern

signal for doing it. As soon as the American people find out that they need sanitary schoolhouses they will get them. Two states—Virginia and Wisconsin—are now conducting state-wide campaigns of sanitary education through their Universities; and Wisconsin is subsidizing her country schools for the purpose of equipping buildings with proper heating, ventilating and sanitary devices.

Will it be long, do you think, before the reproach of sending children to unsanitary schoolhouses will be lifted from every state in the Union?

SUGGESTED READING

AMERICAN SCHOOL HYGIENE ASSOCIATION. PROCEEDINGS OF THE SECOND CONGRESS. *Schoolhouse Construction as Affecting the Health and Safety of Children.*

PROCEEDINGS OF THE THIRD CONGRESS. *An Inquiry Into the Problem of Desks for Children.*

PROCEEDINGS OF THE FIFTH CONGRESS. *Proper Sanitation of the Schoolroom.*

AYRES. *Open-air Schools.*

DENISON. *Helping School Children*, pp. 145-160.

SEARCH. *The Ideal School*, Chapter V.

SHAW. *School Hygiene*, Chapters I-VII.

UNITED STATES BUREAU OF EDUCATION. *American Schoolhouses.*
Rural Schoolhouses.

IV

A SCHOOL CHILD'S DAY

MR. YOUNG.—In our last two meetings we have been shocked to hear that our town is every day sending thousands of physically defective children to spend five hours in a dozen school buildings that are violating many of the simplest rules of sanitation.

What do these defective children do when they get to the unsanitary buildings? How do they spend their time? Our school children's daily programs still wait to be scrutinized. Mrs. Ross will guide us in this task.

MRS. ROSS.—The task would be a most ungrateful one if it were not a necessary step toward an improved schedule for the children. We cannot, of course, hope for the immediate correction of all the abuses that are going on in our schools. Many of these are in accordance with general school practice, and must wait until an enlightened public sentiment puts a stop to them. It will be a great advance for us, however, to understand the abuses clearly.

MR. MARTIN.—It seems to me that the word "abuses" is remarkably strong language to apply to the efforts of the public schools, the most altruistic of all our institutions.

MRS. ROSS.—I can think of no other word that describes so accurately certain things that are taking place in our schools, for the reason that many of our educational leaders have not yet learned to gauge school

requirements according to such non-academic matters as the capacities of little children's eyes and stomachs and nerves.

Our schools at present set a far higher value upon a child's ability to pass a set examination than upon his ability to digest a dinner. That a school curriculum should be arranged with reference to such arbitrary tests as examinations, or to some possible future needs of grown-up citizens, and not first and always with reference to what young eyes and stomachs and nerves will not only endure but thrive under, seems to me the most comic anomaly of all our highly intelligent modern life.

Like all things humorous, the school comedy has its tragic aspect. This appears in the spent eyes, ruined stomachs, and shattered nerves that often pay for the successful examinations and the preparation for future citizenship.

MR. MARTIN.—Are we guilty of bringing such disasters upon our school children here?

MRS. ROSS.—Guilty is the word, Mr. Martin, though our school authorities can shift part of the responsibility to other shoulders. The curriculum of the high school, for instance, is largely dictated by the colleges and their arbitrary entrance requirements; the work in the elementary schools, in turn, is determined by the high school entrance requirements and the state examinations. Our schools devise their own weekly and daily programs, to be sure, but these must be in strict accord with college and state demands.

Before going into a detailed criticism of our school program I wish to make it clear that my report is not based upon opinion but upon evidence. The criticisms and suggestions advanced are made entirely with reference to a few scientifically established facts regarding the

endurance, liability to fatigue, and the recuperative powers of children. The facts so far established are unfortunately few and little known, but they have the immense advantage of being facts, and consequently outweigh the total enormous output of professional opinion up to date. Until about 1910 one school superintendent's guess was as good as another's in answer to such questions as these: How many hours of purely mental work in a day can children of certain ages stand? How much exacting eye work is it safe to require? What is the best number of pupils for classes of various kinds? What subjects are most fatiguing? What is the result in fatigue or stimulation of formal physical exercise? Of what lengths should recitations be made? How frequent and how long should recesses and vacations be?

For many years the discussion of these questions and many others like them has produced great heat and little light. Discussion does not develop physiological law. There is only one method that can show just how school work affects children. This is psychological and physiological investigation which is based upon a thorough analysis of school conditions, and extensive, accurate measurements of the results of these conditions on school children.

Practical work of this sort is new. Many problems of the school program still remain to be solved, but the few results thus far established are sound, and they are sufficiently revolutionary to keep us well occupied for a time in applying them. With uniform consistency the facts that have been worked out show (*a*) that our schools are requiring far more book work, that is, work unconnected with muscular activity, than children can profit by or even safely endure; (*b*) that they are giving too short and infrequent recesses between hours of


study, including an insufficient pause for the noon meal; (c) that their systems of home study, examination, and competition impose on the children dangerous strains which teachers have no means of measuring or regulating.

MR. MARTIN.—I should be much interested to know how the scientists are able to arrive at these sweeping conclusions.

MRS. ROSS.—They have done so by the study and comparison of records of thousands of children. They have measured accurately the work accomplished and the fatigue incurred under various sets of conditions, such as short hours and long hours, with and without interposed recreation periods, at school and at home, before and after heavy meals, before and after vigorous exercise, in large classes and small classes, when the subject was stimulating and when it was dull.

MR. MARTIN.—Results based on such thorough work as you describe evidently admit of no contradiction, but I should like to know, nevertheless, just how it is possible to measure fatigue. Do the investigators depend on the children to say when they are tired?

MRS. ROSS.—Not by any means. Children who are not in the least fatigued often declare they are weary, and no less frequently children on the edge of nervous exhaustion are keen for more work. Objective tests are the only reliable ones for determining fatigue. Those that have been found most accurate are measuring the changes in the action of the muscles of accommodation of the eye, the varying sensitiveness of the nerves of touch, and the speed and accuracy of performing certain mental and muscular processes, such as the written addition of numbers and the copying of letters. There are also general symptoms that indicate chronic fatigue.



These are uneasy and insufficient sleep, loss of appetite and weight, lack of mental concentration, restlessness, irritability, and languor. These symptoms invariably appear among a large proportion of children during term examinations and prize contests, which is quite enough to condemn these practices.

Now let us examine in detail the amount and kind of work our own schools are requiring, and compare these requirements with the soundest modern standards.

We find that our primary grades are spending four-fifths of the school session in formal work, that is, four out of five hours are spent in book study and arbitrary drill in reading, writing, arithmetic, and geography. This arrangement is in direct opposition to the best school usage, which provides that at least half the time in the primary grades be devoted to physical activity of various kinds: singing, educational games and dances, and constructive work, such as weaving, sewing, cutting, building, modeling, and gardening; and that the remaining half of the session be spent in intellectual work which requires a minimum of fine nervous and muscular adjustment for eye or hand. During this time subjects in history, geography, and science may be presented through stories, by pictures (lantern pictures if possible), and by various other materials; and these demonstrations may be made the basis for discussion, description, and reproduction in speech, dramatic representation, constructive activity, and, to a limited extent, in writing and drawing. Such a program allows little more than an hour a day for drill in reading, writing, and arithmetic, but this brief hour is spent in eager, intense work, which accomplishes as much as the three or four unrelieved hours that our schools ordinarily require.

MR. YOUNG.—This program allows for a very limited

amount of eye work. Has it been determined just how much of it primary children can endure?

Mrs. Ross.—The question has not yet been completely determined, but it has been very thoroughly demonstrated that they cannot safely use their eyes the number of hours we now require them to do so, and it is equally evident that one hour, distributed through the day, does the average child no harm. The varying capacities of individual children must, of course, be taken into account in considering any general rule.

MR. MARTIN.—Is such an ideal program as you describe in actual operation in any primary school?

Mrs. Ross.—Such programs are being followed in several of our leading schools with convincing results; conspicuous examples being the Horace Mann School in New York, the University Elementary School and the Francis W. Parker School in Chicago.

MR. YOUNG.—Such a holiday atmosphere as you advocate for the primary grades must, of course, give way to sterner methods in the grammar grades and high schools. How much purely mental work is it considered desirable to impose in these years?

Mrs. Ross.—The capacity for such work increases rapidly in children who are intellectually gifted, but these we must remember are only a very small proportion of our children. The great majority never develop the power of sustained intellectual work, and are forced to protect themselves against the fatiguing effort of doing it by sitting unresponsive during classes, or leaving school. By the 6th grade the children should be sorted out according to their aptitudes, and the "book-minded" ones given two to three hours a day of purely intellectual work, the others not much more than half that time. In the high schools intellectual work for those



THERE'S NO FUN LIKE WORK.

These New York school children bring unbounded energy and perseverance to tasks which are adapted to their capacities and needs.



WHAT ARE THEY RAISING?

Active minds and vigorous bodies are conspicuous items in the crop reports from the boys' gardens in Dayton, Ohio.

5

adapted to it can be carried on three or four hours a day.

A very successful attempt to adapt the work of the three upper elementary grades to the aptitudes of pupils has lately been carried out in some of the Chicago elementary schools. The motor type of children who have been given hand work for half the school day, and book work for the other half have developed ability hardly before suspected. It is not an uncommon thing now for nine out of ten children in a class thus trained to enter the technical high school, though they come from elementary schools which, before this change in curriculum took place, sent almost none of their children to high schools.

The schedule, however, for both elementary and high schools is not to be considered as hard and fast. There are certain ages when tendency to fatigue is especially pronounced, and the school requirements must take this into consideration. At the age of eight, for instance, most children show a distinct decline in nervous endurance, as a result of the double strain of second dentition and the unusually rapid growth which sets in at this year. Their tasks should accordingly be no heavier than the tasks of six-year-olds.


Five or six years after this early nervous check comes the period of puberty, which invariably makes unusual demands on the nervous systems of both boys and girls, and greatly increases their tendency to fatigue. The school requirements should be lightly and flexibly adjusted during this critical period, which with girls arrives between the thirteenth and the sixteenth years, and with boys between the fourteenth and the seventeenth.

The fact that boys and girls reach sexual maturity at different ages, and accordingly need their school work lightened at different times, constitutes a rather forceful

argument for educating the two sexes separately from the thirteenth to the seventeenth yéars.

MR. YOUNG.—I should like to hear how the total number of school hours which you have indicated as desirable should be divided. Have any general standards been established for length of lessons and recreation pauses in elementary and high schools?

MRS. ROSS.—Yes, and these vary widely from common practice. The German scholars with their painstaking thoroughness have worked out the pauses necessary for a combination of maximum efficiency and minimum fatigue. For the lower primary grades purely intellectual work should be limited to fifteen-minute periods, and a pause for rest and informal relaxation should follow every half hour of such work, which should then be succeeded by hand work or directed games. In the upper primary and elementary grades classes should not be held longer than half an hour, and a recess from ten to twenty minutes in length should be granted once an hour, the recess period being lengthened as the school session proceeds and the children's tendency to fatigue increases. This recreation schedule applies with equal urgency to high school work, though recitations there can be extended to advantage to forty or fifty minutes if the classes are large, that is, numbering forty or more. If classes are smaller the length of recitation should be proportionately shortened, as fatigue develops more quickly in small classes than in large ones, owing to the closer attention they demand. Shortening the time for small classes has its obvious economic advantage also, for a given amount of work can be covered in a shorter time in a small class than in a large one, and the energy of the teacher spared as well as that of the children.



MR. YOUNG.—I suppose some of the rest periods may well be taken for gymnastic exercises.

MRS. ROSS.—That is a thing very commonly done, but the practice is wrong. The recesses cease to be rest periods if they are taken up with gymnastics. Formal gymnastics are proven to be fully as fatiguing to brain and body as the most exhausting of all studies, arithmetic. They are doubtless necessary for the health of school children if the schools lack space and equipment for active games and play, but they must rank as one of the fatiguing though desirable school exercises and not masquerade as either rest or recreation.

MR. MARTIN.—In connection with the matter of rest pauses, I have a grievance against our present school schedule. Mrs. Ross hinted at the beginning of her report that the noon intermission was not long enough. This period is certainly not a time of rest in our family, as it undoubtedly should be. The children hurry home, bolt their dinner, and are off again in a rush for their two afternoon hours of school work.

MRS. ROSS.—You have brought up one of the most radical of all the changes which our schools ought to make. The present noon pause of an hour and a half is too short by at least an hour. The noon meal for children should be the heartiest in the day, and should be well digested before further work is demanded. It should be leisurely, and followed for at least half an hour by actual rest or the lightest occupations. Exacting school work should not be resumed for at least two hours after the noon meal. By that time children as well as teachers are able to do as exacting work as in the morning hours.

MR. YOUNG.—So long a noon intermission would re-

quire the afternoon session to extend till 4.30 or 5 o'clock. Do you think parents would agree to that?

MRS. ROSS.—German parents do. Those hours are in common favor in Germany.

MR. MARTIN.—But such late hours would make it harder than ever for the children to do their home study.


MRS. ROSS.—Why should they do any home study?

MR. YOUNG.—I doubt whether a schedule can be devised to avoid it.

MRS. ROSS.—I agree with you, if we are to leave the school requirements and the length of the school session just as they are. One or both of these factors in the school schedule can be changed, however, and will be changed as soon as we wake up to the fact that ordinary "home work" for elementary school children is a barbarism.

In the first place, the home preparation of lessons is often a farce, being done for the edification of teachers by sympathetic parents. I confess my own frailty in this matter, as I never scruple to help my children all I can when I see their nerves strained by home lessons. My scruples develop the next day, however, when the children have taken their neatly done exercises to school, and I pause to reflect that the overworked teachers will use their limited time and strength to mark me 100 in arithmetic. The school board would really economize its resources by delivering parents from the temptation of the "lesson graft."

The other objections to home work have direct reference to health, and are even more serious. In the average home, lessons are studied immediately after supper, with poor light and in the midst of a sociable family. The direct consequences of this arrangement are indigestion, eye troubles, and general nervous strain.



MR. MARTIN.—I fear my own children are inviting some of these disorders, but how to prevent their doing it is a puzzle.

MRS. ROSS.—Do you not sometimes question whether your children might not be better off, mentally as well as physically, with certain of their studies completely dropped? Why do we continue to let the schools pile their dead languages and higher mathematics and fantastic forms of arithmetic upon the children? The disciplinary value of these studies, the psychologists tell us, has been grossly over-rated. And, again, why do we not insist that the schools shall make their sessions long enough for the children to learn the lessons they are sent there to be taught? We seem hardly to realize that we are all part owners of the public school and that our convictions with respect to it can shape its policy. The curriculum is not a changeless entity, incapable of being adapted to the needs of the children, for whom it exists. Let us have it rearranged and prolonged, if necessary, so as to make sure that the children shall go home free from care for their short evenings of social recreation.

MR. YOUNG.—I am greatly impressed with the case you make out against home work. Would you try to abolish it for the high schools as well as for the elementary schools?

MRS. ROSS.—It probably cannot be altogether avoided there, though much of the lesson preparation could be done to the best advantage in the school building after the regular session. In cases where lessons must be studied at home there should be a regular home schedule approved by the teacher, indicating the time, place, and conditions under which the work is to be done. To encourage work in the schools the buildings should be kept

open all day, and a certain number of teachers be in attendance to look after the needs of pupils.

MR. YOUNG.—Wouldn't there be a great outcry if we were to keep the children in school more than the five hours they are already held there?

MRS. ROSS.—There undoubtedly would, if we kept them doing the same formal tasks to which they are already giving too much time; but not if we gave them a chance to play and work with their hands and make things, as children long to do, out of wood and cloth and metal and flour.

MR. MARTIN.—Are any schools actually doing this sort of thing?

MRS. ROSS.—Most assuredly. In Gary, Indiana, for instance, where the compulsory school session is only a little over five hours, half to three-quarters of the children voluntarily spend from six to eight hours a day, Saturdays and vacations included, under the supervision of teachers, in the schoolrooms and grounds and swimming pools. Of the five hours' session itself only one-quarter of the time is devoted to formal class work. The children, probably not more than 5 per cent. of whom are "book-minded," are getting what they want and need in the shops and playgrounds as well as in the classrooms, and are making progress that abashes the conventional schools.

MR. YOUNG.—How much recess or play time do the Gary children have?

MRS. ROSS.—One-fourth of their session is devoted to play, which, however, is often led to have a very close relation to their school work. There are certain games, for instance, which require a knowledge of addition, and these serve as a powerful stimulus to the arithmetic classes.

MR. MARTIN.—If the schools are to absorb so much of our children's time, how are we going to squeeze

A SCHOOL CHILD'S DAY IN GARY, INDIANA

Note the liberal provision for directed play and hand work

FOURTH GRADE

- 8.45 Arithmetic, Geography, History
- 10.15 Play and Physical Training
- 11.00 Reading, Writing, Spelling, and Language
- 11.45 Noon Intermission
- 1.00 Nature Study, or Manual Training and Drawing
- 2.30 Play and Physical Training
- 3.15 Music and Literature
- 4.00 Close of Day's Work

FIFTH GRADE

- 8.30 Arithmetic, Geography, History
- 10.15 Manual Training, or Science
- 12.00 Noon Intermission
- 1.00 Reading, Writing, Spelling, and Language
- 2.30 Physical Training
- 3.15 Music and Drawing
- 4.00 Voluntary play until 5 o'clock

in the private lessons in music and dancing and the other extras?

MRS. ROSS.—That is a rather special problem, as most children have neither music nor dancing lessons beyond what the schools provide. The question is not to be ignored, however, and should be frankly taken up with the school authorities. Parents and teachers must confer in making out the complete daily schedule, and, if it seems wise to make heavy demands on the children

through private instruction, the public school demands should be correspondingly lightened.

MR. YOUNG.—I welcome as a relief from the heavy charges which Mrs. Ross has brought against the schools her reference to the responsibility of parents. Is there not as much juvenile fatigue induced by late evening hours and social thrills as by too heavy lessons? If parents demand that we devise hygienic school schedules, which I admit we have not yet done, they must heed our demand for hygienic home schedules.

MRS. ROSS.—Nothing could be more desirable, Mr. Young. A child's daily program from waking to sleeping, at home and at school, should be judiciously worked out by teachers and parents together, and then adhered to, unless it is proving too fatiguing. Aside from the hygienic value of such an arrangement, the established habit of the methodical disposition of time is a priceless one.

In arranging the daily program teachers and parents must both remember that each child has his own individual limit of endurance, and that even this varies from time to time, as in the ninth year and later at puberty. The eight-year-olds, for instance, should be spared their piano lesson for two years more, unless the school tasks are distinctly lightened to permit of this special nervous tax.

When the daily program is once agreed upon, teacher and parent must still be on the alert for symptoms of chronic fatigue, and warn each other when either sees them.

MR. YOUNG.—Are we to understand that all fatigue must be eliminated from the experience of school children?

MRS. ROSS.—Not at all. Fatigue cannot be avoided

for children, nor is it best that it should be. Now and then children should be made to work a little when they are fatigued. They recuperate rapidly and are all the hardier for their exertions. This Spartan prescription applies only to occasional spurts, however, and should never become habitual. Chronic fatigue is to be avoided like the plague. Children's sleep should be long and sound, and restore their nerves completely each day. If the mornings find children unrefreshed there is certain trouble brewing. Nervous exhaustion in any human being is a scandalous condition. To permit a child to suffer it should be regarded as a crime.

MR. MARTIN.—I should like to know just how long a child's night should be. Our family rules for bedtime have been based altogether on guesswork.

MRS. ROSS.—That seems to be the case in most families, and it is amazing to see how the guesses vary. There are established standards, however, which parents cannot afford to ignore.

SLEEP REQUIRED FOR CHILDREN OF DIFFERENT AGES

Recommended by Dr. T. D. Wood in *Health and Education*.

AGE	HOURS OF SLEEP	TIME IN BED
5-6	13	6.00 p.m. to 7 a.m.
6-8	12	7.00 p.m. to 7 a.m.
8-10	11½	7.30 p.m. to 7 a.m.
10-12	11	8.00 p.m. to 7 a.m.
12-14	10½	8.30 p.m. to 7 a.m.
14-16	10	9.00 p.m. to 7 a.m.
16-18	9½	9.30 p.m. to 7 a.m.
18-20	9	10.00 p.m. to 7 a.m.

Here is a table which shows the number of hours children of different ages should be in bed. The estimate is a liberal one, and with certain vigorous children could be reduced half an hour without harm. It may also be remembered that the amount of sleep needed in summer is somewhat less than that needed in winter, very possibly because of the greater amount of fresh air most children get in their sleeping rooms in warm weather.

MR. MARTIN.—I should be much interested to know how you would lay out the hours of the day for a ten-year-old child.

MRS. ROSS.—Supposing that the time and length of the school session were to be modified, as we have suggested, and the school occupations properly adapted to the children, a daily program such as this would be wholesome for a ten-year-old child:

7.00—	7.30 a. m.	Dress
7.30—	8.00 a. m.	Breakfast
8.00—	9.00 a. m.	Light household duties and trip to school
9.00—	12.00 a. m.	School
12.00—	12.30 p. m.	Return home.
12.30—	1.00 p. m.	Dinner
1.00—	1.30 p. m.	Rest and light occupations
1.30—	2.30 p. m.	Outdoor play and return to school
2.30—	4.30 p. m.	School
4.30—	5.00 p. m.	Return home
5.00—	6.00 p. m.	Piano practice, entertaining. Younger children: housework or other useful employment
6.00—	6.30 p. m.	Supper
6.30—	7.30 p. m.	Household fun
7.30—	8.00 p. m.	Preparation for bed
8.00—	7.00 a. m.	Sleep

MR. YOUNG.—As our closing time has arrived, we can take but a moment to sum up the many important points which the evening's report has brought out.

Physical welfare and growth the chief consideration.
—The underlying principle, as I take it, in laying out the day's occupation for a school child is that every item in the program shall be scientifically adjusted to his physical capacity and wholesome growth, and that, even when this adjustment has been made, constant guard must still be kept by both parents and teachers to make sure that the demands of the daily program are not causing strain.

Allowance for abundant physical activity essential for good health and good school work.—In the planning of a wholesome school schedule, abundant allowance must be made for muscular activity, as this is the most natural form of activity for children, and the means which brings their brains into the most energetic play.

Frequent rest and recreation necessary to avoid fatigue and insure good digestion.—As children become fatigued very easily it is necessary to make their hours of work short and diversified, and followed by frequent pauses for rest and play. Two periods in the day should be especially dedicated to rest and recreation—the times following the noon and the evening meals. Digestion is evidently one of the chief concerns of childhood, and should not only be protected from interference by school demands, but carefully promoted by an opportunity for ease and pleasure after each important meal. No less important than nutrition is sleep, which must also be guarded from the encroachments of school work and of social diversion as well.

As compared with the needs of the child, it appears that the demands of the school have been given scant consideration this evening. The latter must, forsooth, make way at every turn for some demand of the child's mere body—his digestion, his sleep, and even his play!

To what measures shall we teachers be driven? How can we get together our school exhibits and gather our fine files of examination papers if we aren't to put on the screws when occasion demands?

I see only one way out of the difficulty. We must change our idea of what the product of the school should be. The torturing displays of midnight work done by pupils and teachers will no longer answer. Our reverently prepared and marked examination papers will have to go. What will there then be left to show what we've been teaching?

Nothing but wide-awake, well-developed boys and girls!

SUGGESTED READING

ARNOLD. *School and Class Management*, Part II, Chapter I.

FRANCIS PARKER SCHOOL. *Year Book*, 1912.

HOLMES. *The Conservation of the Child*.

SEARCH. *The Ideal School*, Chapter VII-X.

UNITED STATES BUREAU OF EDUCATION. *Provision for Exceptional Children in Public Schools*.

WITMER. *The Special Class for Backward Children*.

V

COÖPERATION WITH PARENTS IN SECURING MEDICAL AID

MR. YOUNG.—Four weeks ago, when we learned that 87 per cent. of the Washington school children were in need of medical treatment, we were told that preliminary steps had already been taken toward securing the treatment. To-night the committee having this matter in charge will report to us the result of six weeks' work.

MISS PARSONS.—Before beginning our campaign we investigated the various methods of securing medical aid which were employed by cities having school medical inspection. We were astonished to find in many instances how little follow-up work was being done, and how small was the proportion of defects treated to the number discovered. Many reports placed great emphasis on the large number of defects found, and these discoveries were apparently regarded as sufficient evidence of the usefulness and efficiency of the inspection system. In one large city, for instance, the department of health could not show evidence that, of 65,000 children whose parents had been notified of their defective condition, more than 8.5 per cent. had been treated.

To avoid the danger of any such fractional result from our work, we realized that we must have the actual interest and coöperation of the parents. Parents of all

kinds and conditions, when convinced that a certain course is for the good of their children, will do almost anything and suffer almost any sacrifice to accomplish it. A formal official notice, however, which invites a parent to have his child treated for a defect of which he has never before heard, does not carry much conviction, and in the great majority of cases is ignored. Most parents know little of pathological conditions, and are very properly timid about trying experiments on their children's bodies.

Our problem, then, was to gain the confidence of the parents and to teach them how their children's health could be improved. We accordingly decided to reinforce the usual formal postal card notification with a little personal influence.* For this purpose we employed two nurses, to whom we gave records of the physical examination and the recommended treatment for all the defective children. A few days after the formal notice of a child's defect was sent to the parent one of the nurses either visited the home or invited the parent to consult her at the school. In these personal interviews the nurse was able to make parents understand the nature of the defects from which the children were suffering and the necessity for having them treated. In most cases she advised the parents to consult the family physician. When a family had no regular physician and no means to pay one, she suggested a dispensary. When the parents were unable to take children to a dispensary, she took them herself at their written request.

The results of this personal work, which has thus far been carried on only six weeks, are very remarkable

* Based upon an investigation in New York City by the Bureau of Municipal Research in 1908; reported in *A Bureau of Child Hygiene*.

—90 per cent. of the children who needed treatment having already been treated by either doctors or dentists. Of the 412 children who needed treatment 227 have been treated for all their defects; 144 for one or more defects, the remaining defects to be treated as early as it is possible; while 34 children are waiting for treatment, which will be given as soon as it can be arranged for. This accounts for all but seven of the 412 children. In these seven cases, constituting less than 2 per cent. of the entire number, the parents would not consent to treatment for their children. You see by these figures that we have gained the active coöperation of more than 98 per cent. of the parents.

MR. ROSS.—Such a high percentage seems to me almost incredible. Your nurses must have spent more time on each case than the ordinary school board could afford to allow.

MISS PARSONS.—On the contrary, I think you will see in a moment that our methods can be actually duplicated in the ordinary school, and that 98 per cent. of co-operating parents and even 100 per cent. is exactly what may be generally hoped for. As you know, our experiment has been carried on for the sole purpose of establishing for all our schools an effective and economical method of following up cases needing medical treatment. The fact that our methods have been new, the nurses untried in this educational work, and the dispensaries unprepared to handle the unusual number, has made our work considerably slower and correspondingly more costly than it need be when it has become established. In spite of this handicap the cost of the nurses' service per child treated was only 60 cents. The amount of work done was really small, compared with the importance of its results. It required but one interview

with parents, half of whom came to the school, to bring about the treatment of 61.6 per cent. of the children; two interviews per case resulted in the treatment of 28 per cent. of the children; in only one case, which was 0.2 per cent. of the whole number, was a third interview required.

The result of our experiment has brought out the following facts:

1. Parents who have been made to understand the serious nature of their children's defects gladly respond to advice concerning treatment.

2. The cost of personally enlisting the parents' interest through the work of nurses is not prohibitive. It can be made materially lower than 60 cents per child treated.

3. The securing of facilities for treatment is still a problem. There are no agencies in our town for providing reliable treatment, between the two extremes of the expensive practitioner and the charitable clinics and dispensaries. Some means must be devised either by our city government, our charitable agencies, or some other organized groups of citizens, for providing skillful medical, surgical, and dental treatment for children at moderate cost or possibly at no cost at all.

MR. YOUNG.—These conclusions have so important a bearing on improving the health of our school children that I should like to hear them further discussed. Miss Parsons had left us with no doubt that parents who are properly informed as to their children's defects will do all they can to correct them. She has also shown us that a very effective way of educating parents is through the work of school nurses. Their assistance is evidently indispensable for the following up of cases.

Nurses, however, are far from being the only means

of rousing parents to an active responsibility for their children's health. The educational possibilities of even formal official notices to parents have not been generally realized in this country, though excellent use is made of such notices by many cities in Germany. The city of Wiesbaden first devised a letter now in use in forty German cities, which is sent to parents before any physical examinations are made. It invites the coöperation of parents as follows:

"For the better protection of the health of children attending the public schools, school doctors have been engaged to undertake the medical inspection of children on entering school, to be responsible for their health as long as they attend the school, and responsible, too, for the school building from the point of view of the pupil's health.

"These provisions will be of great use, both to the children and their parents. In the course of his education much will be learned with regard to the health and bodily conditions for each child, and this new knowledge, which is being gained now for the first time, the school doctors will put at the disposal of the parents, with whom henceforth they will work in the interests of the children.

"Parents who, however, do not wish that their children should be examined by school doctors have a right to exempt them, as the new provisions do not refer to educational matters that are in any way compulsory. Such parents, however, must furnish the necessary information from their own doctor."

Accompanying this letter is a request that in case the examination is agreed to, the father or mother or guardian of the child shall be present at the examination. This insures the immediate understanding of their children's defects.

MR. ROSS.—Is this letter generally well received?

MR. YOUNG.—So well that 96 parents in 100 agree to the school examination. In Leipzig three-fourths of

the parents of defective children act at once on advice offered. Only 3.5 per cent. neglect a second warning.

MISS PARSONS.—While we are waiting for equally effective systems to be established in the schools of our country, a strong educational influence can be exerted upon the home by principals and teachers through the children themselves. An observation recently made in Philadelphia shows how effective the sympathetic co-operation of a school principal may be in securing treatment for children.

Two schools having the same inspecting physician and school nurse showed a difference of 50 per cent. in the number of defective cases treated during three months. The only radical difference between conditions in the two schools was that in the one the principal was indifferent to the work of the medical inspector, while in the other school the principal used active influence to carry out the inspector's recommendations. The methods employed by the coöperating principal were personal interviews, talks to classes, and addresses at parents' meetings in which he explained the children's defects and urged their treatment.

MR. ROSS.—The second principal took a very important step when he called the parents together. In addition to the excellent methods already proposed, I was about to suggest an association of parents and teachers whose object would be the promotion of children's welfare. Notable work has already been done by such organizations in many cities, conspicuous among which are Boston and Philadelphia.

Meeting at the school, the members of these clubs join with the teachers in considering the best ways of fulfilling their common task—the building up of citizens.

The organization provides a center where advice can be sought and found and where study courses and lectures on health are made the means of presenting systematically the knowledge that most parents sorely lack for the wholesome up-bringing of their children. Not only are such clubs potent means of educating their own members, but they are powerful agencies for securing wholesome school conditions for the whole community. The problem of persuading parents to give their children necessary treatment does not exist among members of an efficient parent-teachers' organization.

MR. MARTIN.—I have just been thinking that means ought to be found for doing away with this problem altogether. Though our discussion to-night has centered around the main question of how to persuade parents to give their children needed medical attention, and we have learned a number of effective means for accomplishing such persuasion, it seems to me that any system of persuasion should be regarded only as a temporary make-shift. Must society always remain dependent on the mood or will or intelligence of individual parents for the health of its growing citizens? A child belongs to the state more absolutely than to its parents. The security of its health is of more material importance to the state than to the parent. Should not the state, then, have authority to coerce a reluctant parent and compel him to do all that is necessary for his child's health? Must we not have compulsory health as well as compulsory education?


MISS PARSONS.—You have brought up a tremendous issue, Mr. Martin. There can be no doubt that compulsory health will some day—and that not a very distant day—be as firmly established in our country as compulsory education now is. The day, however, waits upon

two things—a popular demand for compulsory health and facilities for its enforcement.

We are all working toward it now when we are educating and persuading parents to have their children treated. Those cities that are beginning to have school and municipal dispensaries of various kinds are building up means for its enforcement. Indeed, there has already been one actual attempt made in one of our states to secure a law looking to the compulsory health of school children. In the winter of 1911 a bill was introduced in the California legislature providing for the mandatory extension of "health and development supervision" to all the schools in the state, including the various state institutions for delinquents and defectives. Not content with the services of medical inspectors, the bill demanded that there should be "educators," experts in physiology, hygiene, and practical psychology, who could make a skillful diagnosis of the defective conditions of growth and development of school children. Such educational health experts who work side by side with skilled physicians are already employed in several California cities, notably in Los Angeles.

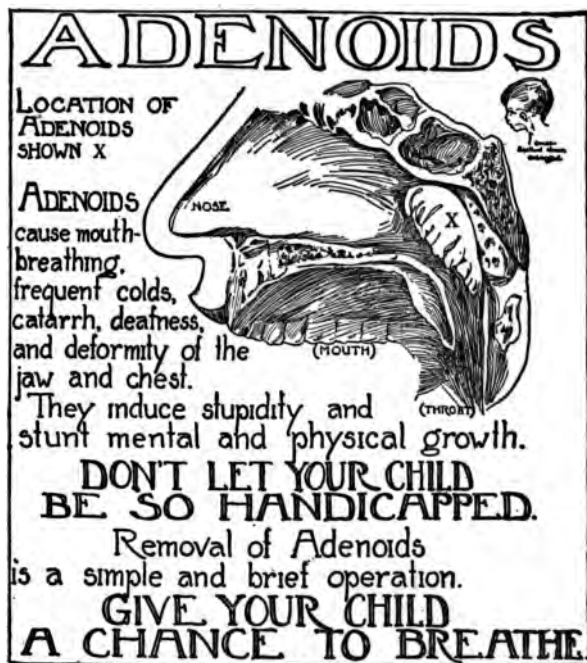
The bill further provided for a State Bureau of Health and Development, whose function was to be the organization and supervision of the state work, and the prosecution of state wide investigation of the problems of hygiene. The public schools were to serve as laboratories for the study of child hygiene; the normal schools were to train their students in educational hygiene; and the state university was to offer training for experts in hygiene.

The bill was splendidly conceived for uniting all the educational forces in the state for a sound and effective health program. It was warmly hailed by people who



understood its promise of welfare for the next generation, but, nevertheless, it met defeat without ever being brought to a vote in the House. So loud was the popular clamor against it that the assembly committee to which it had been referred felt obliged to smother it.

MR. YOUNG.—The popular clamor against such a valuable measure can only be accounted for in one way. The people did not understand its significance and value. The defeat of that bill emphasizes the lesson that many



PARENTS WILL HELP WHEN THEY KNOW HOW.

Such graphic appeals as these will go far toward enlisting the intelligent and active support of parents in a constructive program of child hygiene. From the *Weekly Bulletin of Sanitary Instruction* published by the Chicago Department of Health.

reformers are slow to learn. It is useless for legislation to attempt to outrun public opinion. That same bill or one equally sweeping will yet pass in California, as in all our other states, but not till we get enough voters enlisted for it.

DR. LATTI.—This work of enlistment is going steadily forward under the leadership of able officials who are demonstrating the value of health laws as they exist to-day. For example, in Rochester the health officer, by thoroughly enforcing the present health requirements, is constantly educating the whole city to insist on health rights not yet provided for by law. Convinced of his interest in their children's welfare and his knowledge of the best means to secure it, the parents of Rochester allowed him, even before he had the legal right to do so, to impose his own restrictions in granting working papers. Ohio in 1910 passed a law providing that a working certificate must certify that the child is in proper physical condition to do the work he is employed to do. This law is being strictly enforced in Cincinnati, where it is interesting to note that about 50 per cent. fewer working certificates are now being granted than there were five years ago.

MR. YOUNG.—Rochester and Cincinnati are evidently solving the problem which we have had under discussion this evening—how to win the coöperation of parents in promoting the health of their children. Our discussion has brought out a number of important points which we may sum up briefly as follows:

Under present laws school children cannot receive necessary medical treatment without their parents' permission.

Parents readily grant such permission when they understand the necessity.

Parents can be successfully instructed by means of official bulletins; by the personal influence of nurses, teachers, principals, and children; by lectures, exhibits, and study classes given under the auspices of school boards or associations of parents and teachers, or any other organization whose object is the promotion of children's welfare.

There is evidently no more hopeful field of endeavor in connection with children's health than educational work with parents. The success of such work, where it has been fairly tried, shows clearly that the real solution of the problem of securing health for children lies in an enlightened parenthood.

SUGGESTED READING

AMERICAN SCHOOL HYGIENE ASSOCIATION. PROCEEDINGS OF THE SIXTH CONGRESS. *The School Nurse as a Link in the Chain of Preventive Medicine. Health Problems Encountered in Home Visits to School Children.*

DENISON. *Helping School Children*, Chapters VI-IX.

GRICE. *Home and School.*

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION.
Ninth Year Book, Part II. *School Nurses.*

VI

PROVISION FOR MEDICAL AID

MR. YOUNG.—We have found that parents are eager to secure medical and dental service for their children when they realize the need for it. But how are they all to secure it? We met abundant difficulty in providing treatment for even the 412 school children whose cases we reported last week. How can we get the remaining 4,600 children looked after?

MR. ROSS.—I think that burdensome question should not fall on the school to answer. Let the parents solve it individually.

MR. YOUNG.—If they could, that would certainly be the simplest way. But many of the parents have not the time, intelligence, or money to seek out or to pay doctors and dentists who are qualified to treat their children. The average parent of restricted means is in a rather helpless situation. He is neither rich enough nor poor enough to command very good medical, surgical, or dental service.

MR. ROSS.—What can you mean?

MR. YOUNG.—Exactly what I say. I have the word of a prominent New York physician to the effect that only two classes of people in our country are at present getting the best medical service. These two classes are paupers and millionaires; and, on the whole, the paupers

seem to come off best, because they are invariably treated in hospitals, where doctors demonstrate the latest methods and every modern appliance is at hand. If our school children could be reduced to beggary the problem of providing them with medical treatment would be much simplified. As most of them, however, belong to self-respecting families who can afford to pay something, but not much, for medical service, the problem presses.

MR. ROSS.—Won't the free dispensaries accommodate those who can't pay ordinary doctors' fees?

MR. YOUNG.—Certainly, so far as their resources allow. The charitable dispensaries were of great service to us in getting the Washington school children treated, but they would be swamped if all the needy school children in town were to apply to them.

MR. ROSS.—What alternative is there, then?

MR. YOUNG.—There is only one logical one. If our town is to make the health as well as the education of its children compulsory, as it doubtless will before long, it must supply means for the enforcement of health as well as education. Free professional aid, which includes not only diagnosis and treatment—medical, surgical, and dental—but advice as to daily hygienic living, regulation of diet, and necessary nursing, will have to be supplied to all children who need it or who prefer it to private treatment.

MR. ROSS.—But that is socialism.

MR. YOUNG.—Is it socialism any more than to supply free schools and textbooks? The community expends enormous sums on education to protect itself against ignorance in the coming generation. Can it invest further sums more profitably than in guarding itself against the burden of ill health in the next generation? Free medical treatment supplied by town or state for the sake

of securing sound citizens is no more a charity than is public school education.

The safeguards to health that our community is already providing are nowhere considered socialistic or as exploitations of rich taxpayers for the benefit of poor ones. Our sewers, our garbage collection system, our street cleaning, our present expensive draining of the outlying swamps, and all our other sanitary enterprises are being cheerfully supported by the taxpayers for the sake of fostering the health of the whole community. When, in spite of such general sanitary precautions, the health of any individual fails, is it not for the best interest of the public to supply prompt and effective remedial measures?

DR. LATTA.—England has certainly concluded that it is. Who would have believed a short time ago that the year 1913 would see a free public medical service thoroughly established in England?

MR. YOUNG.—Personal medical treatment at public expense, and public sanitation are really not different in principle. The health of every person in the community is the thing sought for in each case. Since the burden of ill health of any of its members falls on the whole community in the long run, it is far more economical for the town or state to pay whatever sums are necessary for preventing or checking sickness than to suffer the back-breaking cost of unchecked disease. The present free distribution of vaccine and the various antitoxins for diphtheria, tetanus, meningitis, and typhoid is notable evidence that society has already found out the profit there is in laying out money for the prevention and cure of these formidable "catching" diseases. It will not be very long before it is recognized to be worth while for public medical officers to treat, at public expense, any

form of sickness that may arise in the community, or at least to exercise supervision over the cases where private treatment is preferred.

MR. ROSS.—What about the private doctors? Will they ever consent to letting their patients slip out of their hands in any such wholesale fashion?

DR. LATTA.—Not just yet, certainly. Bellinzona, a town in Switzerland, not long ago tried to municipalize its medical service, with the result that 56 of the 58 private doctors went on strike. Lloyd-George in England has also encountered some difficulty in securing medical care for the beneficiaries of his new social insurance system. The British Medical Association was incensed at the medical provision in the act and threatened a general boycott.

In a war between doctors and patients, however, the latter have the unconquerable advantage of numbers. The handwriting has already appeared on the wall, and the shrewdest as well as the most public-spirited of the younger men are preparing themselves for the field of public health service, where the greatest usefulness is to be attained, and the highest laurels are to be won.

MR. MARTIN.—While we are waiting for the enlightened day of free medical service, what can we do to meet the immediate exigencies of our school children?

MR. YOUNG.—The most effective course that has been found in attacking such a wide public need is to call together city officers and representatives of as many private welfare organizations as possible for the purpose of formulating a concerted campaign. Until this most important step is taken it is impossible for a town to estimate its resources. A study recently made in New York City has revealed an amazing number of agencies (119) whose energies can be used for the welfare of

SOME OF THE EXISTING AGENCIES, PRIVATE, PUBLIC, AND SEMI-PUBLIC, WHICH CAN BE UTILIZED FOR IMPROVING
THE HEALTH OF CHILDREN

Adapted from a Compilation by G. Stanley Hall

I. *Hygienic*

Fresh Air Work
Milk Commission or Depots
Public Baths and Gymnasias
Societies for the Prevention of Tuberculosis

II. *Recreational*

Boys' Clubs and Camps
Girls' Clubs and Camps
Park and Recreation Commissions
Playground Associations
Shut-in Societies
Vacation Schools

III. *Relief for Sick Children*

Children's Hospitals, Dispensaries, Convalescent Homes
Diet Kitchens
District Nurses
Free Dental Associations
Institutions for Crippled, Epileptic and Nervous Children

IV. *Child Welfare*

Children's Bureau
Medical Inspection of Schools
Open-air Schools
Parents and Teachers' Associations
Public Education Associations
Visiting Nurses

V. *General Welfare*

Conferences, Surveys, and Exhibits
Relief and Aid Societies
Women's Clubs

school children. The amount of money these agencies spend for the direct help of the schools is not less than a million dollars. Seventy-six of them offer direct, continuous, and gratuitous coöperation with the schools. The report on this study shows further how by coöperation and central supervision of some kind the efficiency of these private agencies can be enormously increased. I recommend this report, as well as a further study recently made, which covers communities throughout the country, as most instructive examples of how to make every possible agency count for its maximum in carrying out any welfare program.*

We have in our own town a number of charitable societies, social improvement clubs, home and school associations—lately formed—and medical organizations of various kinds. Each one of these societies is interested to see a health program for our school children carried out. By uniting their efforts they can go far toward doing it. At an informal conference which we have already held, the officers of these various societies pledged their influence to forward the school children's health movement and particularly to gain the coöperation of their clubs in securing the treatment which the children now need.

The plan is as follows: The Woman's Club is to pay for three nurses who will treat the children's minor ailments, give home instruction, and assist in surgical cases. The Dental Society is to provide free service three afternoons a week until the needy children now requiring attention are cared for. The Society of Physicians and Surgeons is similarly to guarantee medical and surgical

* *Outside Coöperation with the Public Schools of Greater New York*, Bureau of Municipal Research, New York.

Helping School Children, Elsa Denison.

treatment; the Home and School League is to bear the cost of medicines and dental and surgical appliances, and the town hospital to accommodate, free of charge, the children whose cases call for more than a day's nursing.

While this plan is not an ideal one, making as it does so many of the children dependent upon charitable enterprise, it is, nevertheless, an enormous step in advance for us. Not only will our children get the treatment they need, a great good in itself, but, owing to the wide publicity that will be given to the work of the various clubs, the whole town will be impressed with a striking lesson in the public's responsibility for the health of its growing members.

MR. ROSS.—Is such a program as you describe in actual operation anywhere?

MR. YOUNG.—To be sure, with many local variations of course. In a number of communities philanthropic efforts, which are the conspicuous feature of our program, have already served their temporary purpose and been succeeded by public enterprises. The inauguration of free dentistry in the schools of 48 of our cities is one of the direct outcomes of initial charitable work; so is the appointment of over 500 school nurses in more than 150 cities, as well as of many public nurses in rural communities.

The recent establishment of divisions of child hygiene in New York and Philadelphia, as outcomes of philanthropic endeavor, is the most notable step yet taken for the physical welfare of children by any cities in our country. With an annual outlay of over \$500,000, the bureau provides for the physical examination of all the school children, and aims to supply treatment to all children who require it and are unable to pay for it. In addition to

these concerns it watches over the sanitary conditions of both home and school, gives home instruction in the care of children, and provides milk stations where pure milk can be bought at moderate cost. This pioneer work is of great significance; it will exert a profound effect on all our American cities.

In many cities which have not yet taken the advanced position of New York, philanthropic societies are co-operating effectively with the school authorities in securing medical treatment for children. Los Angeles, in the arrangements which it completed in 1912, has developed a combination that is giving great satisfaction for the present. The school board of that city, with the aid of the Children's Hospital Association and the Parent-Teachers' Association, stands prepared to give freely to needy children whatever expert medical attention they require. The treatment is given in two perfectly appointed buildings erected by the School Board on land belonging to the Children's Hospital, the salaries of doctors and nurses being paid by the Parent-Teachers' Association. One of the buildings is equipped to accommodate various kinds of cases that can be treated in a single day. Here the children's eyes, ears, noses, throats, and teeth are treated by both men and women doctors and dentists. Circumcision is also provided for. In the second building, which is a carefully conducted hospital, children may remain as long as necessary, the Parent-Teachers' Association paying the bills.

MISS PARSONS.—Los Angeles may well regard this thorough provision for its children's health with pride. The plan indicates an advanced sense of public duty with respect to children, but the arrangement, liberal as it is, has not yet reached its final form. Eventually all the school children will be free to come for treatment

and the city will pay all the bills. Los Angeles, as well as other similarly disposed cities, will in time shake itself free from dependence on any charity, such as the Children's Hospital Association, for the care of its children, and it will furthermore cease to single out unfortunate children to become recipients of special town benefactions.

MR. ROSS.—But why shouldn't the poor children be the ones to receive these benefits? They certainly need them, and the others don't.

MR. YOUNG.—Such an arrangement is essentially undemocratic. All children have a right to health as well as education, and none should be humiliated by securing it under conditions of special dependence. Many so-called charities, both private and public, are a constant confession of injustice in our social and industrial system.

MR. ROSS.—That's a queer sounding remark, Mr. Young. What would become of the social order without the haven of charity?

MR. YOUNG.—We don't want to part with charity, Mr. Ross, but with certain injurious forms which it now takes. Some of our charities actually encourage social injustice by alleviating and hiding distress which should be heralded abroad as indications, for example, of impossible living wages or deadly housing conditions.

MR. ROSS.—The charity that provides medical treatment for poor school children can hardly be charged with shielding greedy employers and landlords.

MR. YOUNG.—Possibly not—but, however that may be, the children of a community should not be dependent for their health on the voluntary offering of certain citizens. To be sure, with the many forms of injustice still operating in society, we cannot as yet spare the

direct benefactions of generous men and women who are blazing the way for public benefactions that will be received as a right. Universal justice, when it comes, will mark a far higher stage of social evolution than is possible under a régime of private charity, however princely. Justice, for instance, demands that every human being shall have health as a right and not as the voluntary offering of his neighbor.

MISS PARSONS.—And is not this view daily gaining wider acceptance? Coöperation among those concerned, and not dependence on an outside agent, is proving to be the only sound basis for any permanent social betterment. In our war on disease we are beginning to realize the tremendous power that lies not only in organized philanthropy, but in organized common effort that is not dependent on philanthropy.

The valuable health measures that many of our states and cities are adopting, such as the suppression of communicable diseases and the care of tuberculous cases, are activities, democratic in the sense that they are not dependent on philanthropy, but not yet democratic as regards the distribution of benefits. The free public care of the sick and the distribution of remedies and prophylactics are still limited largely to actual dependents or impostors. To be thoroughly democratic a general tax for the treatment of disease should carry with it the right of every taxpayer to profit by it.

DR. LATTA.—Such a democratic scheme, carried on privately, it is true, is proving remarkably successful in the University of California, where 4000 students receive expert medical care, minor surgical treatment, and preventive advice for a flat fee of \$3.00 a year. The doctors and surgeons, employed in this coöperative service, are very able men, receive good salaries, and are highly

pleased with the opportunity of pursuing their profession, free from the harassing consideration of fees.

MR. YOUNG.—On even a larger scale has been the work of certain semi-public coöperative societies, notably the very successful sickness insurance companies of Germany. In our own country the life insurance companies have been the most conspicuous leaders among non-charitable organizations in a nation-wide campaign against disease. To take a single example, in 1909 one of our leading insurance companies launched the novel plan of nursing its sick policyholders and destroying the diseases that threatened them. Though the contract of the company calls only for the payment of a death benefit, the directors believe it is profitable as well as humane to postpone the death of policyholders by laying out money to keep them well. To this end they inaugurated a thorough educational campaign, as well as an actual nursing system by which nurses' services are supplied promptly and without cost to sick policyholders as long as there is need.

The records of the company already show innumerable cases where distress has been relieved, lives saved, and earning capacity restored by the work of the visiting nurses. The extent of the service has been enormous. In the first six months of 1911 there were over 320,000 visits made by nurses in 473 cities and towns. The company is planning to extend its work over the entire country at an annual cost of over \$500,000.

In addition to providing nurses' care for the sick, this company distributes health bulletins that reach regularly about 15,000,000 people. When tuberculosis is found the sufferers are given every practical direction that modern science offers for a successful fight against this disease. Suggestions for diet, clothing, and daily habits

are plainly set forth, along with photographs, designs, and specifications for inexpensive sleeping porches and all other arrangements for open air living.

Simple and thorough directions are also supplied for preventing the spread of disease. It is in the line of prevention that the company is probably doing its most remarkable work. Realizing the immense economic advantage of preventing disease rather than curing it, the officers provide policyholders with sound and practical directions for the sanitary care of their homes and families. Even the children holding policies have been organized into a Health and Happiness League, whose pledge is a series of promises that make for the health and happiness of the members and all whom they meet.

MISS PARSONS.—The health campaign of this life insurance company, conducted as it is on a gigantic scale and by the most expert methods, is a profoundly significant thing. Here we have open to 6,600,000 men, women, and children in one organization alone, a great benefaction, whose basis is not charity but business policy. The benefaction is regarded not as a privilege but as a right, for the cost of it is maintained by the people who are benefited. Such thorough work as this insurance company and others are doing will undoubtedly serve as a model for whole communities that are beginning to realize the economy of promoting health.

DR. LATTA.—In the meantime the full resources of the life insurance companies should be brought into play in the work of health education. The extent of their influence is enormous. Our leading companies have a trained force of 80,000 medical examiners—a greater force than our standing army—as well as 20,000 agents, all of whom are constantly at work among 20,000,000 policyholders. The educative power of these

great organizations has as yet hardly been tapped. In fact, we must turn to the fire insurance companies to gain a really adequate idea of the incredible saving from loss that can be accomplished by a scientific course of prevention. Let me quote Professor Irving Fisher in this connection: "The fire insurance companies maintain a laboratory at Chicago, where building materials are tested as to fire resistance, and they have done so much in the way of fire prevention that the insurance rate on cotton and woolen mills, for instance, has fallen from \$3.00 to \$4.00 per \$1,000 to 7 cents! The life insurance companies can do as much to prevent disease as the fire insurance companies have done to prevent fire."

MR. ROSS.—I should like to know whether the experiment of the life insurance company which Mr. Young has cited has paid financially.

MR. YOUNG.—That cannot be definitely determined for some years, though there are already strong indications that it has. In a number of cities, for instance, where the nursing service has been conducted, the death rate has decreased much more than it has done in other cities of the same size and similar industrial conditions but unprovided with nurses. The managers are confident that events will prove the economy of their course, which they declare is the only practical way of meeting the responsibility they owe to the people who support the company. They believe that a life insurance company must actually insure *life*, if it is to prosper in the end, and that the time is passing when the people will tolerate the grim irony in the term life insurance which is now taken to mean *death* insurance.

DR. LATTI.—There is little reason to doubt that re-

ducing death losses through health conservation will prove highly profitable to insurance companies. Certain insurance statisticians have calculated that an outlay on health of only 1 per cent. of the annual income would save enough lives to give the companies a profit on the investment of at least 100 per cent.

MR. YOUNG.—Some such organized protection of health as the insurance companies are developing will in time gain general adoption. Whether the protection can best be provided by private insurance companies, or such government-supervised societies as are now flourishing in Germany, or through direct public administration by state, as in England, are questions of method that will gradually be adjusted. Whatever final form these organizations may take, they will necessarily be established and conducted according to two fundamental principles which have already made themselves very clear. These principles have as vital application to our own little question of treating the town school children as to the largest health problem before the human race. It will be worth while to state them.

1. *The best and most economical machinery for conserving health can be operated only by strong organizations which can command the services of experts in medicine, education, and scientific management.*


Since it is to the interest of all society as well as to the individuals directly concerned that the most efficient and economical machinery be employed for keeping every one in health and exterminating every disease, society for its own protection will be compelled to devise means not only for bringing organized methods of treating and preventing disease within the reach of all, but of compelling their use. General health taxation of

one kind or another, and general free treatment of disease, will be the final result of this necessity. The first public step in this direction will be medical aid for school children at public expense.

MR. ROSS.—I can't see why they should have it. It isn't at all democratic to make one set of people help pay the bills resulting from the indiscretions of another set of people.

MISS PARSONS.—You cannot dismiss the causes of children's diseases by calling them indiscretions. They have far more sinister names than that. These are poverty, vice, ignorance, and mismanagement. The public schools themselves, we have found, are among the agencies that are needlessly injuring the health of our children. Should not the town and state that control the schools, and which have compelled the children to attend them, at least be required to repair the untoward damage inflicted through compulsory school attendance? And, further, should not society as a whole pay the cost of the poverty, vice, and ignorance which it permits to prey on the health of its weakest members, and through these on the health of all? Those who suffer most from such afflictions have least power to remove them. The curse can never be lifted unless the whole of society gets under the load.

MR. YOUNG.—Taxation on account of the preventable sickness of others, in addition to being fundamentally just, has the further advantage of serving as a powerful stimulus to the stronger members of society to remove the causes that are dragging the whole structure down. It is only by bringing the handling of disease under public administration, making the cost of it a public burden, and, furthermore, the reduction of it the chief motive to those who treat it, that we can hope to



reduce sickness to a minimum. This brings us to the second principle which must govern the effective control of disease.

2. Since the stamping out of all preventable sickness and the upbuilding of health are aims of far greater consequence in any organized health program than the mere treating of such sickness, it is necessary to provide physicians with sound economic motives for giving their best endeavor to positive health culture and to the prevention rather than to the cure of disease.

Our present method of employing doctors merely to attend us in illness, and not to keep us from contracting it, is an appalling handicap to the usefulness of the profession. The ordinary private physician is in a hopeless dilemma where his professional zeal for reducing the sickness of mankind conflicts vitally with his very real need of patients. In spite of this clash of interests many of our physicians, led by high ideals of public service, are taking time from lucrative practice to give unpaid help to the various health movements. How much more might these men accomplish if such public work were made their actual profession and not the efforts of a few stolen minutes; if their highest public service were made to harmonize with their own private interests.

Mrs. Ross.—In that case the children's specialists would win their laurels not from the number of desperate cases they had snatched from death, but from the number of children they had kept from sickness altogether.

DR. LATTA.—Exactly. Our greatest children's doctor would be the wisest counselor in child hygiene, and not necessarily the most skillful wrestler with mortal disease. Where the "treating" physician at his best can

save but a hundred lives, the efficient hygienist may save ten thousand.

The public does well when it captures the best private physicians for the wider field of public service and rewards them appropriately, with both honor and income. If the health of society were in the hands of wise public physicians who were free to put into practice all the sanitary knowledge now available, and whose salaries were to be increased as the number of patients diminished, sickness would flee from the earth at a pace we can never hope for under our present benighted system of paying a premium on it.

MR. ROSS.—I can't see where you will stop if you begin to give free medical care at public expense. Why not nourishing meals and airy bedrooms as well?

MISS PARSONS.—Why not, indeed, if that were the most effective way of obtaining these prime necessities? Society can ill afford to let any of its members lack them. Since they are universal daily needs, however, they can be obtained only by universal daily effort. No insurance organization can be devised to feed all its members every day. The treatment of the sick, on the other hand, is an occasional burden pressing heavily on but a few individuals at a time. A slight general tax, which would burden no one, would insure all against the risk of disease. Sick benefits are absolutely different in principle from daily dispensations of bread and butter.

MR. YOUNG.—The question of good food and housing which Mr. Ross brought up is not, however, out of place in our discussion of the treatment of defective children. While, as Miss Parsons says, there is no way for the ordinary man to dodge the responsibility of working for the reasonable necessities of life, it is further true that thousands work hard for them and never

get them. In fact, the problem of securing healthful living conditions is far less simple than the question of medical care. It involves the government regulation of wages, of trusts, of food preparations, of housing conditions, of unemployment, of child labor, and numerous other economic puzzles.

MR. ROSS.—If the whole matter is so involved as you indicate, what good will a little free medical treatment do, anyway? If the cause of school children's ill health lies in bad living conditions, seeing the doctor isn't going to help. Why shouldn't society solve its fundamental problems instead of going to a lot of expense in patching up mistakes? I must confess that I can't see why free medical service for the public in general, and for school children in particular, is a whit more important than scores of other benefits which every one would like to have but can't.

MR. YOUNG.—The health of the public in general and of school children in particular is the very core of the nation's life. We cannot wait for the social readjustments to take place that will insure healthful conditions for all. The school children are suffering *now*; the coming generation is threatened *now*. It is not a question of pauperizing individuals; it is a question of saving the strength of the state. This lesson has just been dearly learned by England. The Boer war revealed an appalling decline in the vigor of her manhood. Why? Because for three generations she was indifferent to the physical welfare of her children and their working parents, who were wearing out their lives in the mills.

Our own country is as yet full of fresh life. How can we best preserve it? By giving a free hand to our doctors, who should be our public servants, responsible to the public not only for the cure and prevention of

our diseases, but for the upbuilding of our national health.

SUGGESTED READING

BUREAU OF MUNICIPAL RESEARCH, NEW YORK. *Outside Coöperation with the Public Schools of Greater New York.*

DAWSON. *Social Insurance in Germany.*

DENISON. *Helping School Children*, Chapters III, IX, XIII.

GORST. *Children of the Nation.*

HALL. *Educational Problems*, Part II, Chapter XI.

SEAGER. *Social Insurance, Program of Social Reform.*

VII

TEACHING CHILDREN THE ART OF HEALTH

MR. YOUNG.—Our last two discussions have convinced us that the chronic diseases and defects of school children which have until very lately been ignored can be properly treated only by the schools taking a hand. Provision for necessary treatment and enforcement of it are evidently among the greatest responsibilities of public schools to-day.

There is one responsibility still greater. This is to teach children how to be well. Medical treatment, while indispensable, is only repair work. Much that is now needed would be unnecessary if the children had lived under proper conditions and practiced healthful habits. Far more important, then, than the patching up of impaired children is the duty of teaching children how to keep out of the repair shop altogether. To give sound health training is the most important educational work of the schools.

We have been teaching hygiene for many years, but have we ever succeeded in developing hygienic habits among our children? Why haven't we? Because we have presented the subject as a theory of health and nothing more. What our children need to learn is the art of health. How to convert the theory into practice is what we wish now to consider.

SCOPE AND METHOD OF HEALTH INSTRUCTION

With a view to getting new life into our health instruction, both at school and at home, I wish to submit to your approval a few recently developed standards as to matter and method in teaching hygiene. Let us first consider the amount and kind of the instruction that should be given, together with the relation this should bear to the rest of the curriculum. We will then discuss special methods for enlisting the coöperation of the children in practicing what they learn.

CONSTANT INSTRUCTION WHICH IS CORRELATED WITH
OTHER STUDIES

So important is it for everyone to have as thorough and practical a knowledge of hygiene and sanitation as possible that these subjects should be kept before pupils throughout their school course. This should not be done by presenting them as isolated studies. Since daily practice, and not the storing up of theory, is the great object in view, it is necessary to bring the principles of healthful living into closest possible connection with all the interests and activities of children. These principles can be brought in naturally with a score of school occupations and studies: weather observations, games, and festivals, nature study, primitive life, industries, and discussions of social and ethical questions.

MR. ROSS.—Do you think such incidental attention to these subjects would be enough? Is it not necessary for the children to make some separate textbook study of them?

MR. YOUNG.—To be sure, children need a certain

amount of book study to focus and coördinate the ideas which they should be receiving constantly through other sources. Good primers of hygiene and sanitation are indispensable aids in health instruction. Their contents should, moreover, be largely mastered before the sixth grade is reached, in order that the school deserters, who flock off at that year, may be included in this instruction.

Textbook study, however, should never be regarded as an end in itself. Books on hygiene and sanitation are most valuably employed when used as reference books in studying subjects of more vital appeal than abstract health. The study of home life or town and country industries, for example, offers many interesting problems which can be solved only by acquiring a fairly thorough knowledge of certain phases of hygiene and sanitation. The children consequently consult books on health to find out facts that they are eager to know in their broader connections, and thus receive a strength of impression quite impossible were the same facts to be arbitrarily set before them as lessons to be learned.

MR. ROSS.—Has everything in the schools got to be dressed up so that children shan't know they are working?

MR. YOUNG.—We are not trying to beguile the children into work, Mr. Ross. We are merely offering them sound motives for putting forth their efforts. Do grown people work without good reason? Why should children? It is a profoundly immoral thing to make children perform what seem to them irrational tasks. Is not the wisest and most reasonable disposition of his time the thing that marks the man of highest development? Is not the hopeless misdirection of his efforts the mark of the inefficient man? Are we teachers

to dull the natural discrimination of children and train them to inefficiency by setting them at work which to them has no value? Surely the more important a subject of instruction is, the more important is it that this should be presented in a way to appeal to the children's active interests.

TECHNICAL STUDY IN THE HIGHER GRADES

After the fundamental principles of hygiene and sanitation have been acquired in the earlier grades, the upper elementary and high school grades may offer more technical study through manuals dealing with first aid, care of young children, methods of public sanitation, and prevention of disease, but this more special study should be conducted for the most part like the earlier health study. It should still be made incidental to broader interests, such as history and civic life.

MR. ROSS.—Your scheme may be ideal, but is it practical? I should fear that teachers and pupils would get so hopelessly tangled up in trying to weave all their strands of knowledge into one garment that their minds would be in great danger of going bare. Have these extraordinary theories ever really been put into practice?

MR. YOUNG.—They have, indeed. I was about to refer to a detailed outline of just such health instruction which is now being successfully carried on in Speyer School, New York. I have here, in fact, a brief outline for work in the eighth grade of this school. The whole program, which is published in *Teachers' College Record*, May, 1912, will prove immensely suggestive to teachers who are trying to put life into health instruction and don't quite know how to do it.

HEALTH IN ITS RELATION TO LIFE

APPROACH: INTEREST IN COMMUNITY LIFE THROUGH THE
STUDY OF HISTORY AND CIVICS

General Scheme

- I. The meaning of health. (*October*)
 1. The relationship of health to citizenship.
- II. How does it pay to be well? (*November*)
 1. A personal consideration.
 2. A civic interest.
 3. Why good health pays.
- III. The value which the school places upon health.
(*December*)
- IV. How the city protects its citizens. (*January*)
 1. Health protection.
 2. Protection of property and rights.
 3. Protection against accidents. (*February*)
 4. Protection against disease.
- V. National protection. (*March*)
- VI. What keeps people from being well? (*April*)
 1. Accidents.
 2. Disease germs.
 3. Unhealthful work and surroundings.
 4. Bad habits.
- VII. Some personal and civic problems. (*May*)

OUTLINE OF HEALTH STUDY FOR THE EIGHTH GRADE IN SPEYER
SCHOOL, TEACHERS' COLLEGE, NEW YORK.

MR. ROSS.—I shall try to reserve my judgment until
I have seen this publication. In the meantime may I

ask why you have made no mention of physiology? Has it "gone out," too?

MR. YOUNG.—Physiology presented as an isolated description of the body and its functions has gone the way of Greek and certain forms of mathematics. It does not serve the purposes of a common school education. A detailed knowledge of physiology has about as much bearing on ordinary health practice as a mastery of calculus has on bookkeeping. Physiology as a separate study is a subject for specialists. If the high schools wish to offer a course in this subject they should make it elective. The limited amount of physiological information necessary to give force to the principles of hygiene can easily be introduced as illustrative material in the study of the latter subject.

It must always be remembered that the actual test of successful health instruction is not the passing of examinations on scientific textbooks. It is in the wholesome condition of the children. Clean teeth, skin, hair, nails, and clothes make up some of the evidence. New York City sets these items as its first requirements for credit in hygiene, which is now necessary both for graduation and for promotion from grade to grade.

SEX INSTRUCTION

As opposed to physiology there is a natural science which has generally been reserved for high schools and colleges, but which, in simplified form, can be brought down to the elementary grades with great advantage. This is the science of biology, which serves more admirably than any other means to give children a sane and reverent attitude toward the supreme function of all living things, the imparting of life to others. In this

study, which begins with the simplest living forms, children come to realize deeply the wonder and the beauty of the universal natural provision for extending life through sex and parenthood. Such an attitude is essential for a proper reception of the specific sex instruction which the schools are beginning to recognize as their duty to offer.

Preparation for family life and parenthood should undoubtedly be one of the chief concerns of the school, and this responsibility rests in part, though not wholly, upon those responsible for health instruction. "Thus, in connection with lessons upon filial duty, self-respect, personal dignity, patriotism, obligations to posterity and to the race, conscience, purity, and religion, the facts of sex life have their proper place." *

MRS. ROSS.—May I inquire as to the extent to which it is considered wise to carry sex instruction into schools?

MR. YOUNG.—That is a hard question to answer, Mrs. Ross, because much that is desirable to bring into the schools is it not yet wise to introduce. Instruction by outsiders throws undue emphasis upon the subject; and few teachers at present have the experience and training or the natural fitness to carry out the delicate task of leading children to think frankly and wholesomely about sex matters. That does not mean for a moment that we may not yet develop teachers fit for this task. The normal schools have a great responsibility in this matter. It is within their power to fill the schools in a few years with teachers who have the necessary information and the right attitude concerning sex facts to be helpful guides to growing children. Until such teachers are generally provided for our schools, however, it will be impossible

* C. R. Henderson, *Education with Reference to Sex*.

to lay down any set program for such instruction. As much harm may come from forcing it as neglecting it. At present each school system will have to be guided by its own limitations and opportunities, bearing in mind, of course, constantly the program that, under ideal conditions, should be carried out.

As to what this program should contain, there is a fairly general agreement among our educational leaders who have seriously studied the question. This is well summarized in a set of recommendations sent out by the Society of Sanitary and Moral Prophylaxis. These are as follows:

ITEMS WHICH SHOULD BE INCLUDED UNDER SEX INSTRUCTION

Every boy and girl has a claim to knowledge:

(1) Of the functions and hygiene of the chief organs of the body, including the reproductive system.

(2) Of the meaning of sex, marriage, home-making, of the sacredness of the prenatal life, the influences of heredity and the consequent duty of right living, even when young; of the responsibilities of parenthood.

(3) That handling the organs of reproduction, except as necessary for cleanliness, injures sometimes health and always mind, character, and sense of honor, causing greater mental and moral harm as one grows older.

(4) Of the most prevalent contagious diseases, such as tuberculosis, syphilis, gonorrhea; their danger as indicated by statistics of wide prevalence; their many methods of communication; including the fact that syphilis and gonorrhea exist almost universally among those leading immoral lives; a reason for avoiding such men and women as one avoids those with diphtheria and smallpox; that they are more difficult to cure than any other contagious disease and that their harm is more far-reaching.

(5) Of the normal phenomena of adolescence; the physiologic influences on health, mind and morals of clean thoughts, reading, conversation, entertainments, companions; the value of occupation and physical exercise in keeping thoughts and habits

and health good; the avoidance of tobacco, alcoholic drinks (including patent medicines, many containing alcohol), the advertisements of "doctors" and "remedies" found in newspapers, magazines, etc.

Every girl has a claim to instruction concerning the hygiene of menstruation, the function and sacredness of motherhood and the care of infants.

Every boy has a claim to instruction concerning the value of conscience, and avoidance of ignorant and evil advisers in this matter; the sacredness of fatherhood, and the duty of protecting all girls and women from evil as he would his sister or his mother.

The physiology and hygiene of sex, when successfully taught, is an essential part of the course where it logically belongs. It must not be interjected.

MR. MARTIN.—I must say that this list of items strikes me as a rather overwhelming array of facts to set before our children. Must we part with all idea of youthful innocence?

MR. YOUNG.—Have you any idea how many of our public school children over eight or ten are youthfully innocent? Probably not one in twenty. They know the things they should not know and they don't know the things they should. Can the school any longer evade the responsibility of directing their natural and irrepressible interest in sex matters along proper channels?

MISS PARSONS.—We must bear in mind that if children do not get proper sex instruction in the elementary schools, 93 per cent. of them are likely to get it nowhere. The elementary school is the only school that this vast majority of American children ever attend.

HOW TO MAKE SEX INSTRUCTION COUNT

May I add a word also about the program for sex instruction which Mr. Young has just read. It perhaps

seems somewhat bald and over-emphatic with regard to the repulsive and negative side of the subject. This side cannot be ignored, of course, but it need not be unduly emphasized and indeed, as I happen to know, it was far from the intention of those who framed this program that it should be. The matter of emphasis is in the hands of the teacher as is also the entire success of such a program which requires to be carried out with careful wisdom. In order to succeed, the teacher must be constantly guided by two fundamental considerations. The first is that high and beautiful ideals, such as are most vividly embodied in some hero, are far stronger incentives to right action than anticipated punishments. The pathology of sexual misdeeds should accordingly not receive as much emphasis as should the high satisfaction and honor which come from following a difficult but self-respecting course. The second consideration is that injunctions as to right conduct cannot possibly result in right conduct unless opportunity is given to carry them out. A course of action must accordingly be opened to boys and girls which will make it possible for them to put into operation the difficult instructions that have been laid upon them.

If girls are told to guard their health during menstruation, the schools must help them do it by relaxing demands of attendance and preparation of lessons when necessary. If boys and girls are instructed to be modest and restrained in each other's presence, the schools must give them the chance to meet and practice those virtues in parties and dances held under favorable auspices. Many schools in New York City and elsewhere are already doing this for their young people. If boys are advised to check their sexual desires they should be provided with other exciting outlets to their growing ener-

gies. Wholesome fads of all kinds, such as airships, electrical experiments, boat-building, and photography, should be encouraged by the schools, in addition to the valuable standby, athletics.

COÖPERATION OF PARENTS NECESSARY

DR. LATTA.—Making such wholesome provision for boys and girls as you indicate gives an opportunity for the closest kind of coöperation between school and home. There is no point in health instruction or moral instruction—the two are inextricably associated—where it is so indispensable that the efforts of parents and teachers shall be mutual. Parents are unable to meet the responsibility alone—so are the schools. Parents, as a rule, are not well enough informed themselves to give their children all the instruction they need; on the other hand, the schools cannot know as parents can when individual inquiries as to sex facts begin.

The first question very certainly marks the time for the first instruction, which should be given frankly, tenderly, but briefly by parents in prompt answer to specific questions put spontaneously by their children. It is not at all necessary to go into physiological detail in the early years. Children do not demand this, but they do insist on having the fundamental mysteries cleared. If they cannot persuade their parents to enlighten them they go to the turbid fountain of information, the street, where they acquire the most sacred facts of life in a solution of poison. Definite school instruction even in the first grade cannot be sure of anticipating street instruction. The coöperation of parents in this matter is vital. It is necessary that they end once for all the sense of forbidden mystery which at present makes

school instruction in the physiology and hygiene of sex a self-conscious and uncomfortable thing.

MRS. ROSS.—How are parents to be persuaded to break their habitual silence on these matters?

DR. LATTA.—We cannot hope, I suppose, to revolutionize the practice of all those who are now parents, though parents' meetings with frank instruction and discussions have already resulted in a partial change of sentiment. Many fathers and mothers are beginning to appreciate the wonderful opportunities that the first innocent inquiries offer them for cementing the love and confidence already existing between themselves and their children; and, on the other hand, to realize the grievous blow which they strike both at themselves and their children if they repulse the childish confidence which prompts the early questionings.

Before a complete change in parental feeling can be effected, however, a new generation of parents must be reared, and this fact gives the schools a present responsibility of double weight.

For the best thought on sex instruction, which combines a rare ideality with a close practical knowledge of needs and methods, I recommend to your further study Professor C. R. Henderson's report on Education with Reference to Sex.*

ESTABLISHING HEALTH HABITS

MR. YOUNG.—Miss Parsons' appeal for the school to afford means for boys and girls to practice the moral and hygienic precepts they have been taught brings us to the question of how to convert health instruction into

* *Eighth Year Book*, Part II, of the National Society for the Study of Education.

health habits. To do this successfully we must recognize the three forces which are most powerful in directing conduct, and consequently in establishing habits. Briefly stated, these are (a) *example*, (b) *motive*, (c) *continuous practice*. The teachers and parents who do not constantly heed these fundamental springs of action will not proceed far in their critical task.

Example.—Dr. Latta startled me last week by telling me that if I wanted the school children to stand straight I'd have to stand straight myself. I had inadvertently failed to apply what I knew well enough, that example was the most potent of all educational influences. Although we hear much rhapsodizing about the true education being an unfolding from within, and a leading out (e-duc-ing) of one's inner gifts, the fact remains that education is largely a laying on from without, and a drawing in to one's self of the knowledge and ways of others.

Since this process is the main business of the formative years, it is a most fortunate coincidence that children want more than anything else to be as other people are and to do as others do. Their natural tendency to imitate other people is immensely increased by admiration, and when children are lucky enough to admire their parents and teachers they strive to imitate these heroes and heroines in every possible way. All the personal tricks are faithfully reproduced, posture, breathing, chewing, smoking—in fact, every act on which the observant youngsters can get any data. While this tendency is in full swing parents and teachers have no difficulty in persuading children to adopt healthful habits if they show their own respect for them by consistent observance.

MR. ROSS.—That puts a mighty burden of responsi-

bility on us all, doesn't it? Must our children's desirable habits be limited to those they see us practicing? Haven't we a right to expect the new generation to be an improvement on the last? If not, how does social evolution operate? For instance, it is too late for me to make over my own habits of eating, but I don't intend to have my children bolt their food as I do.

MR. YOUNG.—You have expressed very frankly an attitude of parents and teachers that is a perpetual stumbling block to children and that keeps social evolution from operating more rapidly than it does. Parents and teachers are not necessarily finished human products. Should not they and their children struggle on, hand in hand, to conquer the difficulties and win the rewards of life?

MR. MARTIN.—If, among the difficulties, you include that of thorough mastication, I can commend Mr. Young's plan. We have adopted chewing reform in our family with pronounced success. My sister and I entered into the game with the children, and we all vied with each other in making record chews. It is far simpler to socialize a reform like this, making it a family or class effort, than to attack the difficulty individually. Our youngest child, it is true, was now and then careless about the rules of the game, but one punishment, an impressive one, was all the help he needed. He was not allowed to finish his supper. Though he was almost through with it, the effect was as thorough as starvation. He has been our star chewer ever since.

MR. YOUNG.—The measure which impressed Mr. Martin's small son with the advantage of mastication illustrates the second influence we noted as leading children to form good habits.

Motive.—If a dog performs his trick nicely you give

him a caress or a biscuit. By a system of rewards and discouragements you easily lead him to acquire all kinds of habits, which are known to you as tricks and to him merely as certain evolutions that bring about desirable results.

This simple and thoroughly effective method of establishing habits works just as well in the school or home as in the kennel. Children, like dogs, have a preference for doing things that are worth while. When they once become convinced that healthful habits are desirable they will practice them to the end of their days.

MR. ROSS.—Now what do you mean by desirable? It seems hardly fair to use arbitrary punishments and rewards to induce children to form good habits. If good and bad habits don't bring their own rewards and punishments in good health and ill health, what do they amount to at all?

MR. YOUNG.—To be sure. Children should be led as soon as possible to realize the tremendous profit that healthful habits yield, but before they are old enough to appreciate this they sometimes require very tangible evidence. A three-year-old hasn't had enough scientific training to realize the causal relation between imperfect chewing and dyspepsia. When he is deprived of his supper, however, he meets a concrete and instructive experience which is a symbol of what actually happens to some extent to every food bolter.

Such expedients are, of course, necessary only in the very early years. Children are soon able to appreciate the priceless blessings that good health confers—beauty, prowess, fun, usefulness, earning capacity, friendship, happiness. This list makes a powerful appeal to growing boys and girls, who do all in their power to win such prizes when they believe they know the way.

The Speyer School plan of hygiene instruction takes full account of these social motives. It is qualified at every step to arouse a desire on the part of children to keep themselves and their surroundings wholesome. I am confident that we cannot do better than to adopt a similar method for use in our schools.

For the present, however, I believe we need to supplement this general plan with a certain amount of intensive work on health subjects. Since the Speyer School course is developed as a unit from the kindergarten to the eighth grade, it will evidently be many years before all our children are able to receive the full benefit of such a course. It therefore has seemed essential that for a time we provide more special and striking opportunity for health study, so that the older children may not leave school without having gained a clear impression of its immense importance.

The special program which we have already introduced takes account not only of pupils, but of parents and teachers, among whom it is highly necessary to arouse a new interest in health matters. A serious and practical attitude toward these concerns, I regret to say, is a rather new thing for us all. It is, therefore, highly important that we direct widespread, earnest, and immediate attention to them. The only way to do this is to disregard temporarily certain ideal pedagogical considerations and frankly resort to successful advertising methods. This is exactly what we are doing.

Our problem is to make all our children and their teachers and parents see as promptly as possible that wholesome habits are desirable. The only way to do this is to prove it to them. Lectures, exhortations, and pictures of drunkards' stomachs do not prove anything. Demonstrations do. Therefore, we are demonstrating.

We are using our schoolrooms now not merely as lecture halls for teaching hygiene, but as laboratories, and the children themselves are serving as their own subjects of experiments.

Our first step was to take the pupils and their parents into our plan and make them see what a valuable thing it would be for us all to find out surely whether hygienic habits bring about the good results that are claimed for them, and we showed them further that schools of several hundred children each furnish the best possible means for making such an investigation. As a first step we asked the children with the help of their parents to fill out forms, setting down their daily physical habits, their hours of sleep, frequency of baths, opening of windows at night, thoroughness of mastication, tea drinking, cigarette smoking, etc.

Both children and parents responded to this request with surprising promptness and earnestness. When the reports were all in we held a few early evening meetings for both parents and children, at which physicians gave short talks on the laws of health. We then explained that we wished, if possible, to establish the value of each one of these health laws, and that in doing this we should be greatly aided if every child who was found to be neglecting any of them would, with the aid of his parents, correct some single practice designated by his school principal. Consent to this plan was heartily given and the experimental work began.

On the basis of their reports the children were formed into groups, according to the single habit which varied most widely from standard. The flagrant tea drinkers, the short sleepers, the food bolters, even the cigarette smokers, agreed respectively to reform their one worst habit, leaving the other habits unchanged during the

time of experiment (six weeks). I may say parenthetically that in rounding up the cigarette smokers we did not depend entirely on their own confessions. A little judicious detective work arranged between teachers and parents had been necessary both for discovering the smokers and for holding them to their promises. One boy, who disregarded his promise, immediately lost his place among the army of investigators. The school sentiment was so overwhelmingly against this deserter that no one has since ventured to break training. The children are immensely in earnest and will tolerate no insincerity or "faking" among their number.

MR. MARTIN.—How are you expecting to show the benefits resulting from this six weeks' experiment?

MR. YOUNG.—By two series of measurements taken at the beginning and at the end of the six weeks. These measurements include weight, height, lung capacity as tested by the spirometer, and nervous energy as indicated by a hand dynameter.

These methods of testing the children's physical condition have been chosen because they are thoroughly practical for dealing with large numbers. They are somewhat crude, of course, and even with our closest care will doubtless permit a certain amount of error to appear in our results. It has already been a little disconcerting to observe that some members of our "mastication squad" have lost weight since they began to chew more thoroughly, and that a few of our tea drinkers are showing increased nervousness since they dropped their tea. These cases are due to exceptional causes, however, such as sickness, toothache, and domestic upheavals of various kinds. They will not seriously mar the success of our experiments, since the number of chil-

dren taking part in them (5,000) is large enough to make an average result contain but a small percentage of error. The children understand that they cannot expect to see a miracle performed in every child or in every class. They are accordingly waiting with great interest for the returns from the other schools, where children of the same age are coöperating in the same experiment.

MR. ROSS.—I must confess that Mr. Young's scheme strikes me as very interesting. I should fear, though, that the unusual excitement brought about in the schools by this novel experiment would entirely demoralize the ordinary school work. How has that been going forward since the "training" began?

MR. YOUNG.—Your question brings up one of the most interesting facts in connection with this experiment. The school work during this time has been carried on with a vigor and enthusiasm quite unknown in my previous experience. Realizing that the health experiment, as long as it lasted, would be the consuming interest both in the schools and the children's homes, we have related most of our school work to it. First of all, we have provided for a considerable amount of direct study of hygiene, based on recent excellent textbooks in that subject. In addition to this, the other studies have all been connected with the present prevailing interest of the school. The arithmetic work has been based upon the numerical aspects of the laws of health, such as amounts and proportions of food and hours of sleep, and upon tabulations and calculations of the various measurements made on the children. Much of the actual measuring and recording has, in fact, been performed under supervision, by the children themselves. The reading and composition work has centered on

health matters, and even the history and geography have been brought into line by being made the occasion for studying the living conditions of other times and climes.

It is the first time we have ventured in our schools to depart from formal tradition and to carry out the modern idea that school work should be inspired by a vital and immediate motive. So successful is our experiment proving, however, that we shall later arrange some such general program for a thorough study of home, school, and town sanitation.

We shall not confine this instruction to what the books declare ought to exist. We shall supplement such theoretical knowledge with a scrutiny of the actual conditions in our town, including our schools and homes. The children will look into the matter of how their own homes are ventilated; they will find out whether their schools are cleaned by dry or wet sweeping; they will discover the mosquito-breeding places in their neighborhoods, and they will be made responsible, whenever possible, for looking after certain sanitary details in their homes and schools and neighborhoods.

They will study public sanitation by seeing how the trolley cars in which they ride are ventilated, how the town streets are cleaned, how the color of the water in the river changes at the points where the sewage flows in; and by comparing local sanitary provision with the best methods in use elsewhere for securing the people's health. They will learn what "bacterial count" means and how it indicates the purity of our water and milk supplies. They will conduct bacterial experiments themselves, and see how the conditions of our milk and water compare with safe standards. Some of the children will make excursions to the filter plant of the neighboring town and bring a report of it to their schoolmates. In

a hundred ways they will learn what sanitation really is and how it pays.

MR. ROSS.—This is all very excellent, but it seems to me that you have made an unwarranted assumption in taking for granted that children really value health much, and that they will adopt sanitary practices when they are convinced that these will result in health. They certainly will not if they are like my boy. His health is the last thing he ever thinks of. Except as his mother controls him, he is absolutely reckless of it, as indeed most boys are.

MR. YOUNG.—I don't doubt it, but it is not because he doesn't like to be well. When the actual possibility of pain and disease confronts children their bravado vanishes. Have you ever seen a panicky youngster holding his breath, gallop by a quarantined house in mortal fear that a germ would catch him? Children do not need to be convinced that health and strength are things they want. Their skepticism is usually directed against the means for securing these blessings.

In impressing the desirability of health habits on the children we are not confining their attention to the profits they themselves derive. We are making it clear to them that the benefit is shared by many others, those in their families and schools, and, in fact, the whole town. They see that the less sickness each child has, the less of the family income melts into the hands of the doctor, the less the work of his class is interrupted, the less strain and possible sickness his mother and brothers and sisters and neighbors suffer.

The moral obligation of keeping one's health, the children are discovering, is as soundly based as that of any other virtue. Truth telling and honesty are accounted virtues merely because they contribute to the general

good. Individual good health, they see, contributes to the general good no less than these. To fail in health when others depend on you is to break a promise; to spread contagion is to steal. Good health, like honesty, is the best policy.

Continuous Practice.—The best examples and the most powerful motives, while they are effective aids in initiating habits of health, are not always sufficient to fix them. There is only one swift, sure way to do this. I will ask Miss Parsons to discuss it.

MISS PARSONS.—Parents and teachers who really want results must resort on occasion to the military method of obtaining them. They must not allow lapses in conduct.

MR. MARTIN.—But how can they prevent occasional lapses? Children aren't under observation all the time.

MISS PARSONS.—They ought to be.

MR. ROSS.—What! Do you mean that our poor children are never to have any rest from supervision, or the patient teachers and parents from incessant supervising?

MISS PARSONS.—You put it rather unsympathetically, but that is just what I mean. A thoroughbred race horse is never left to his own devices. He is too valuable a creature. What about a child? Until he has acquired a reliable bent it is the most reckless folly to turn him absolutely loose. An hour of unsupervised play can make mischief for a lifetime.

MR. MARTIN.—Your idea is so novel that I hardly grasp it. Do you actually mean that all children, rich and poor, should be watched and guided all the time? Do you believe for a minute that such an arrangement is possible? Working parents cannot keep their eyes on their children much of the time, and, as for the

teachers, they already have more work than they can do.

MISS PARSONS.—Let us have play leaders, then. There are various ways of giving children more supervision than they now have. Lengthened school hours, which provide for directed play as well as work, supervised playgrounds and recreation centers, these all tend to increase the time that children are wholesomely employed under responsible guidance.

MR. MARTIN.—I find it hard to give up the idea that the rough and tumble treatment which children give each other free from their elder's scrutiny is the best part of their education.

MISS PARSONS.—That cherished conviction is very widely held, but it has no basis in fact. Unsupervised play among boys of different strengths always crowns the bully who has the muscle to support his claims. It is also in their unwatched moments that children give each other liberal instruction in vice, which is a part of almost every public school child's present education.

MR. MARTIN.—I fear that this is undeniable, and yet, won't all this supervision take the spontaneity out of our children?

MISS PARSONS.—Far from it, if the supervision is of the right sort. A good play leader encourages all the wholesome impulses of children. By enforcing fair play he actually liberates unsuspected powers in the more timid children, who would stand no chance at all in the free for all scramble of unsupervised play.

MRS. ROSS.—Children's play has an effect on character no less marked than upon physique, and if we do not make sure for the children that their play shall be *right-minded* and *friendly* as well as *physically safe*, we may be wronging them more deeply than if we were to expose them to physical danger. In Gary, as you remem-

ber, the schools and grounds are open under supervision all day for the special purpose of saving the children from the demoralizing street and alley. The Gary children so far have lost none of their spontaneity, but they have been spared a great deal of viciousness and cigarette smoking.

MR. YOUNG.—Our discussion seems to have wandered to the question of enforcing moral as well as health habits, but after all, these two sets of habits are intimately associated. The method of enforcement, eternal vigilance, is the same for each. When parents wake up to the truth that *habits*, not half-forgotten *facts*, are the actual fruits of education, and that children's habits are being formed every minute of the day, they will manage to work out some plan whereby every one of these minutes shall be wholesomely directed.

In closing, let me call your attention to the valuable training in health habits that is being carried on through the Public School Athletic League in New York. Ten thousand school boys in the spring of 1913 were preparing to take part in the great demonstration of the league to be held in June. To a man, they voluntarily adopted and rigidly kept the following set of health rules:

- Go to bed at 8 P. M., after a thorough wash.
- Scrub the teeth and gums thoroughly.
- Have your clothes and books ready for the next day.
- Keep your bedroom windows open top and bottom.
- Rise not a minute later than 7 A. M.; take two minutes for drill and hygienic exercise.
- Clean face and neck and scrub hands.
- Finish with a cold splash all over.
- Rub yourself hard all over.
- No coffee; no tea; drink milk, a little at a time.
- Chew your food to a pulp.
- No smoking.

Then look yourself over and ask yourself: Am I clean from head to foot? Do I stand up like an athlete?

SUGGESTED READING

AMERICAN SCHOOL HYGIENE ASSOCIATION. PROCEEDINGS OF THE THIRD CONGRESS. *The Problems of Hygiene and the Province of the Normal School. The Teaching of Hygiene.*

PROCEEDINGS OF THE FOURTH CONGRESS. *New Principles in the Teaching of Hygiene, The Teaching of Sex Hygiene.*

PROCEEDINGS OF THE FIFTH CONGRESS. *The Consecration of the Affections, Often Misnamed Sex Hygiene.*

Some Suggestions for a Course of Study in Hygiene.

DENISON. *Helping School Children*, pp. 233-246.

HEALTH EDUCATION LEAGUE. *Health Education Series.*

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NATURE STUDY REVIEW. February, 1910.

TEACHERS' COLLEGE RECORD, May, 1912.

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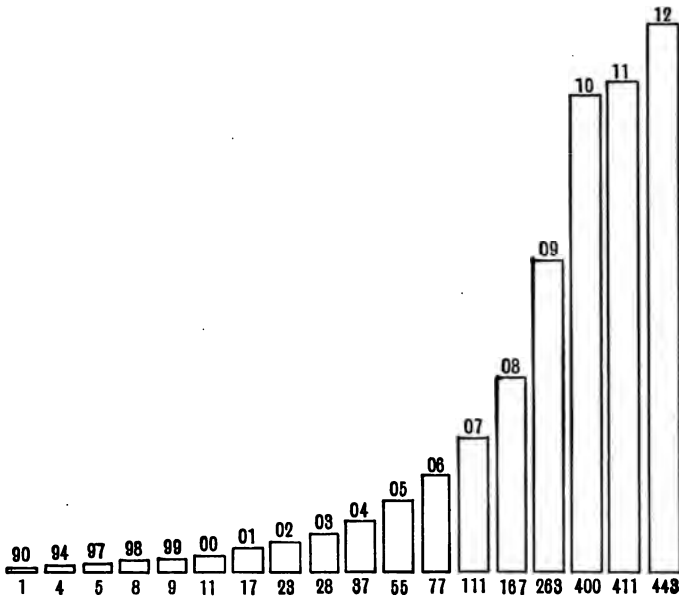
HEALTH SUPERVISION IN SCHOOLS

MR. YOUNG.—In 1890 the little western city of San Antonio established a system of so-called school medical inspection. Four years later Boston, with its neighboring towns, Brookline and Cambridge, took this step. In 1902, twenty-three cities had taken it; in 1912, four hundred and forty-three cities were conducting some form of medical inspection* and in 1913 it is estimated that eight hundred cities were doing this. The health supervision movement is sweeping the country, and is about to capture our own town.

The work which our club has been directing for the health of the school children has aroused the citizens, and they are demanding that public measures be taken for accomplishing in all the schools what we have done experimentally in two of them.

These measures cannot be arranged overnight. We must plan them with closest care if we would escape the blunders already made by scores of cities which have rushed uninstructed into the health business. While health supervision is a vital improvement that has come to stay in the schools of our country, it has not yet passed the experimental stage. It has still no general standards. Each city evolves its own method, which is

* *What American Cities Are Doing for the Health of School Children.*—Russell Sage Foundation.



THE RISE OF SCHOOL HEALTH SUPERVISION.

often so inadequate that its chief benefit seems to be the air of progressiveness which its name imparts to the town.

A preliminary survey of this field has been made by Miss Parsons. We shall hear her report to-night.

MISS PARSONS.—Without in the least discrediting the health supervision movement, I must admit that the fruits it has so far borne are not yet commensurate with the stir it has made. The towns we have visited have displayed a wonderful variety of systems which, with a few most hopeful exceptions, are so rickety that they would not be tolerated at all under any private business management. The main trouble is that most health su-

pervisors have not yet found out just what they want to do or how they want to do it. Their program is vague; their methods more so.

There is only one proposition on which all are united. No one disputes that the purpose of health supervision is to promote the health of school children. From this point on we encounter amazing divergence. There are no generally accepted standards of what constitutes health in school children; of what are the best means of preserving and building up their health; or of restoring it when impaired. Such problems of technique have been largely overlooked.

Notwithstanding this temporary maladjustment between purpose and method, the prospect for sound health supervision throughout the country is bright. Within the year all our largest cities have made distinct advances in the efficiency of their systems, and here and there, in various states, smaller cities and country communities have forged out excellent devices for meeting special problems. By coördinating the best experience thus far available we shall be able to establish a very effective system for our own town.

To-night's discussion will be devoted to our projected health supervision program; our next discussion will be given to the best methods of carrying it out.

The general aim of health supervision in schools is to guard and develop the health of pupils. The means for carrying out this aim are fivefold:

1. Medical inspection, examination, and aid.
2. Sanitary supervision of school buildings and homes.
3. Hygienic regulation of school and home activities.
4. Health instruction of pupils and parents.
5. Physical education of children.

MEDICAL INSPECTION, EXAMINATION, AND AID

The distinctively medical division in a system of health supervision should be responsible for the standing as well as the progress in health of all pupils. To this end, it must provide for the periodic physical examination of pupils in order to determine what form of physical development or corrective treatment they may require. It must also provide for inspection for contagious disease at stated intervals, as well as at such other times as circumstances may call for, and it must fix and enforce quarantine in coöperation with the board of health. Finally, it must not only keep a thorough current record of the health condition of all pupils but enforce and provide, when necessary, the proper treatment of all disease and removable defects discovered.

The necessity for guarding against contagious disease in schools is so apparent that, when a school system begins to take any special measures for its children's health, its first step is invariably to establish some form of inspection for such disease, the main purpose being to discover each case as promptly as possible in order to exclude it from school.

The motive of such inspection work is merely community protection, and is not based upon a concern for the sick children themselves. This necessary precautionary work is as much as many systems up to the present have undertaken.

Some cities, however, recognizing the need of attending to the individual health of children, now require, in addition to the regular inspection service, a partial or thorough examination of every school child, to determine his state of health and development. A little more

than half of the cities which require examinations are satisfied with a record of eye and ear difficulties.

The examination work that we have done experimentally in our own town has left us in no doubt, however, of the tremendous importance of finding, with a view to their correction, all the chronic defects which are handicapping our children. The need of correcting the defects thus discovered, and, indeed, of treating properly all illness, slight or serious, which affects school children, indicates the third demand that rests on the medical division of a health supervision system. This is either to arrange for or actually to give medical, surgical, and dental treatment to all the children who need it.

MR. MARTIN.—Aren't you talking revolution, Miss Parsons? If there is one regulation on which our committee has found practically all medical supervision systems united, it is the emphatic order that school physicians shall not only give no treatment, but offer no advice as to treatment.

MISS PARSONS.—Was there ever a more short-sighted policy? Why waste these doctors so? The one big thing that most of them are as yet trained to do is to treat disease. All the medical schools still lay their chief stress upon this function. Why should we deprive the doctors of opportunities for service, compelling them to eke out their incomes by doing nurses' work—you will see next week that inspections and, to some extent, examinations are nurses' work—when the best use they can make of their time at present is to treat the school children?

MR. ROSS.—Would not such a course tread on the toes of the family physician?

MISS PARSONS.—That is one of the theories, to be sure, on which school treatment is so vehemently opposed, but the theory doesn't hold water. It has been

overwhelmingly demonstrated, in our country and abroad, that private practitioners are not called upon widely to treat school children, even when the schools have discovered the need.

DR. LATTA.—We must admit, however, that New York City in 1911 made an exceptional showing in this regard. Fifty-eight per cent. of school children treated there received treatment at the hands of private physicians, the remaining forty-two per cent. depending on hospitals and dispensaries.

MISS PARSONS.—But even when private doctors are extensively called upon, which is not often, a large proportion of them leave the children in worse condition than they found them. Have the schools a right, do you think, to send the children off to practitioners who are likely to harm them?

MRS. ROSS.—What an extraordinary idea, Miss Parsons. You have made an appalling statement. Does Dr. Latta hold the same opinion?

DR. LATTA.—Unfortunately, I do. The fees that physicians receive are, to some extent, an index of their competency. Can you expect a man who earns his living by making bedside visits for twenty-five cents to handle cases as competently as the two or three-dollar man?

MRS. ROSS.—But the poor can't pay more for medical service for their children.

DR. LATTA.—Exactly, but can society afford to let the majority of its young citizens—the poor are always the majority—depend upon the kind of medical treatment poor parents can afford?

MISS PARSONS.—Fortunately, perhaps, the poor parents, as we stated, do not call widely on private physicians when their children's defects are discovered. Dispensaries and clinics of some kind must invariably be

pressed into service to secure anything like an adequate amount of treatment for the mass of school children. The confusion, delays, difficulties, and often the impossibility of providing treatment in such institutions which are under the supervision of neither school nor health board, make the arrangement extremely unreliable. On the whole it has proved a failure.

A medical inspection and examination system that, in spite of proved experience, continued to trust to the hazardous coöperation of outside agencies or irresponsible physicians for carrying out its own recommendations comes pretty near to being a farce. Most of the systems in our country, until very lately, have been of this order. If ours is to take higher rank it must provide for the treatment as well as the examination of the children.

DR. LATTA.—We shall not be absolute pioneers in such an undertaking. The schools are everywhere beginning to realize the necessity for providing prompt and proper treatment for pupils, not only for the benefit of the children, but for the sake of raising their own efficiency through the resulting improvement in the attendance and the energies of the children. True, not many American cities have as yet developed satisfactory arrangements for providing treatment, but the number of those making a start in this direction is increasing every day. The day is even now in sight when school dispensaries will be general.

MISS PARSONS.—The largest cities are already providing nurses' rooms, where slight accidents and ailments are treated by the nurses. This arrangement alone is an immense advantage to the schools, obviating as it does the necessity of wholesale exclusion for minor contagious diseases, which formerly were a fertile source

of truancy and often resulted in the complete demoralization of the school. In New York City, school exclusions have been reduced from 57,000 in 1903 to slightly over 3,000 in 1911, and this in spite of the great increase in the number of school children in that time. Forty-eight cities have school dentists and a few have dental nurses whose business it is to give prophylactic care to the children's teeth. New York City is conducting eye, ear, and dental clinics and is considering the establishment of dispensaries for the treatment of other defects. A few cities, among them Los Angeles, as you remember, are conducting polyclinics where all non-infectious ailments and defects can be treated. The technique of the whole problem of children's clinics and dispensaries has been well worked out both in Europe and in our own country.*

MRS. ROSS.—You would not, I suppose, advocate compulsory school treatment?

MISS PARSONS.—Certainly not, unless parents failed to secure necessary and satisfactory private treatment for their children. The determination by the school authorities of what may be called satisfactory treatment is, of course, a matter for very wise adjustment. However that may be arranged, I would at any rate advocate a more extensive follow-up system on the part of nurses than is commonly practiced. If it is worth while to follow up any case of sickness or defect, it is worth while to follow up every case. The little illnesses that ordinarily pass off without the attention of a physician—the short “bilious spells,” the digestive upsets, the slight colds, the headaches—all of which play havoc with school attendance and school work, should be subjects of special attack on the part of the school nurse, who

* *Medical Inspection of Schools*, Chapter XV. A. H. Hogarth.

can do much by tactful home instruction to prevent their future occurrence. The more serious cases should, of course, also be recorded, and the school authorities satisfied through the inspecting nurses that proper treatment is being provided.

MR. ROSS.—Are you not introducing too much paternalism into your system?

MISS PARSONS.—No paternalism at all, Mr. Ross. Would you say that our democratic system of public education is paternalistic? Why, then, should you regard the enforcement of health as a less democratic procedure than the enforcement of learning? If the school is to carry out its essential purpose of developing useful citizens, it cannot afford to take any chance on their health. It is the business of the medical corps to see that no chances are taken.

SANITARY SUPERVISION OF SCHOOLS AND HOMES

Sanitary supervision of schools has for some time been recognized as an essential safeguard to the health of school children. It will not be necessary for us tonight to review the program of school sanitation, having discussed this at some length in an earlier meeting*. I wish, however, to emphasize the need of fixing definite standards of *home* sanitation, and of extending the system of sanitary inspection to include homes as well as schools.

Unless wholesome surroundings are to be regarded as luxuries merely for school hours, supervision of home sanitary conditions is fully as important as the supervision of school conditions. Efforts to improve home conditions have already been made by visiting nurses

* See Chapter III.

Spotless Town Crusade New Britain Conn.

Does your back yard look like this?



If so, why not clean up before Easter Sunday?

*Dirty yards cause flies, sickness, death.
Old tin cans hold water; water breeds mosquitoes.
Rotten garbage makes bad air, bad air makes weak
bodies, weak bodies make big doctor's bills.*

What you can do to help make New Britain a Clean City

1. Take away all the ashes and dirt from your back yard immediately. Send your rubbish to the dumping ground.
2. Clean out your cellars, stables and sheds. Whitewash your cellar walls, fences and hen-houses.
3. Burn all rubbish that will burn. Clean your vacant lots and alleyways.
4. Avoid mixing ashes and garbage. This is against the law. You may be fined five dollars.
5. Refrain from throwing old paper, banana or orange skins into streets.
6. Plant some grass and flower seeds to make your home beautiful. Every house should have a little green grass and a few trees.
7. When you have cleaned up for Easter, **KEEP YOUR YARD CLEAN ALL THE TIME.**

The Board of Public Works, City Hall Telephone 77, will furnish information concerning teams and dumps.

This is the Program

April 8 to 15, Spotless Town Week; everybody clean up.
April 9, Palm Sunday; all dirt from the winter carried away.
April 14, Fast Day, Holiday; all dirt carried away.
April 16, Easter Sunday; let us make New Britain a city that is

"AS CLEAN AS AN EASTER LILY"

JOSEPH M. HALLORAN, Mayor.
DR. HENRY T. BRAY, Health Officer.
AUGUST BERGSTROM, Sanitary Inspector.
HERBERT A. JUMP, Sec'y of Spotless Town.

CIVICS AND HEALTH.

The "Spotless Town League," composed of ten thousand New Britain school children, distributed this appeal and enlisted the entire population of 45,000 in a clean-city crusade. The appeal was printed on yellow paper in six languages.

and teachers in many communities, but such work has thus far depended largely upon voluntary personal zeal or the occasional appeal of an especially needy case. Home inspection should be put on as sure and systematic a basis as school inspection; for the school has a right to know the home conditions of all its pupils, and to insist, either through its own authority or that of other public agencies—health boards, housing officials, or nuisance inspectors—that the children's physical surroundings shall not fall below a minimum standard for healthy growth. The actual records of home and neighborhood inspections, including such items as the condition of streets, alleys, and vacant lots, and the drainage of pools and gutters, can be made of great direct value to the school children by serving as practical material for their own study of hygiene and sanitation.

In a number of towns children have been successfully enlisted in a town-cleaning crusade. They take great pride in bearing a recognized part in a real town movement. The beneficial effect both on the town and on the children is quite incalculable. In this connection the achievements of Mrs. Caroline Bartlett Crane, of Kalamazoo, "the Mother of Spotless Town," are well worth consideration. The success of this remarkable woman's work is due as much to her ability to educate citizens in the purpose and methods of public sanitation as to the actual sanitary work which she directs in their towns.

HYGIENIC REGULATION OF SCHOOL AND HOME ACTIVITIES

Questions of the relation between health and the activities and conditions of school life as well as the home life of school children, present almost a virgin field of school health supervision. Certain items which

belong under such general heads, as health of teachers, recess periods, and home study, have now and then received desultory attention, but these items and many others like them are fast shaping themselves into the whole general problem of securing a healthful round of twenty-four hours of activity, rest, and recreation for children. This is actually the most fundamental of all the questions involved in the health of children at school.

When the contagious diseases are brought under control, as they will be, and the school houses and homes cleaned up, as they will be, and a proper food supply secured, as it will be, the one great factor influencing the health of children will be the manner and conditions of their pursuits. We touched on a few of the most important matters under this head when we discussed a school child's day, the distribution of his hours of study, play, and rest, but our discussion, thorough as it seemed, dealt only with the fringe both of what is known and what is yet unknown in this comprehensive field.

Though a hundred questions still wait for scientific determination, there are scores of facts thoroughly attested, which it should be someone's business to push through the hard-set doors of our schools. It is a favorite pastime of school experts at present to contemplate the unknown, and to formulate brilliant lists of questions still waiting answer in connection with the hygiene of child life. It would be an even more brilliant exercise of their wits to secure the recognition of what is already known, and to make it the basis of school practice.

Every one knows, for instance, that a cheerful, friendly schoolroom atmosphere is an essential condition for health, and that healthy, cheerful teachers are indispensable to this arrangement, and yet how many

schools are taking measures to keep their teachers well and happy? Every one knows that it is an unnatural strain for little children to be kept sitting in repressed silence for hours every day, but the schools aren't letting up much on this curious method of developing citizens. Every one knows that work which gratifies the instinctive desires of children draws out their most joyful and vigorous endeavor, and yet the schools are either ignoring entirely or recognizing in very grudging measure the passion of children for constructive work and dramatic expression, while continuing to ply them with premature formal studies that would later present a vital appeal and be covered in far less time, at far less cost of energy both to teacher and pupil. In short, every one knows that the highest physical well-being requires that work shall not only be free from strain, but a source of interest and joy; and yet how many schools see to it that the yoke does not rub? How many are prescribing work for little children according to its joy-giving capacity?

We need some authority in our schools to enforce the principles already known that relate to the healthful activities of children.

MRS. ROSS.—It is a new thing to me, and most enlightening, to hear these matters grouped together, as they evidently should be. Could you give us further items that come under the general head of hygienic activities?

MISS PARSONS.—Plenty of them. Protection of children's eyes by every possible means—books printed on unglazed paper, in large, distinct type; clean, unglazed blackboards on which large characters are used; coarse writing pens and soft pencils; the abolition of slates; regulation of the amount of close eye work to fall short

of the fatigue limit; requiring of proper illuminating facilities in homes; protection from nervous fatigue by fitting school demands to individual capacities—allowing for physiological age, and the manifest aptitudes of children in the assignment of their work; separating children who show widely different rates of progress, thus removing a general and constant source of discouragement or irritation. Finally, persistent inquiry and investigation as to matters not yet determined, such as the effect of long hours of sitting on heart action, of indoor school work on the number of red corpuscles in the blood, of hours of study on gain in weight. These are only a few of the vital questions which must be brought under regulation by experts in the hygiene of education.

MRS. ROSS.—I don't see how our little town can hope to command the services of an expert able to speak with authority on all these critical matters.

MISS PARSONS.—It ought not to be necessary for each little town to employ actual authorities on educational hygiene. If we can only be supplied with approved standards from an authoritative source, our local authorities can put them into execution. The best information on these subjects should be made available to all our schools by the state education department or the national bureau of education or the children's bureau. A number of our states which are most progressive in health matters are already doing valuable educational work of this kind, issuing frequent bulletins to health officers, and holding health institutes; but the individual efforts of these states, however valuable they may be, are likely to be sporadic and variable. The standardization of educational hygiene is a national concern. The states require national guidance and help in this work. The Washington bureaus should focus the

knowledge that is being gained through our nation-wide experiments in the hygiene of education, and they should be equipped to give out to every school in the country, either directly or through state departments, authoritative information as to the best standards achieved to date.



LEGAL PROVISION FOR SCHOOL MEDICAL INSPECTION (1912).

States in white have mandatory laws; shaded states have permissive laws; states in black have no laws at all. [From Russell Sage Foundation.]

HEALTH INSTRUCTION OF PUPILS AND PARENTS

A system of health supervision should include general oversight of the hygiene and sanitation that is taught to school children and their parents. The methods and details of such work should, of course, be developed with the coöperation of the educational staff of the schools, but it should be the special province of the health supervisors to give constant power and direction

to this important instruction, which tends to become hopelessly weak unless it is under expert control. Teachers, owing to the character of their training, know less about hygiene and sanitation than about any other subjects they are expected to teach, and, until normal schools wake up to the need of giving generous training in these subjects, health supervisors will have to make up the deficiency by supplying teachers with information as well as enthusiasm.

PHYSICAL EDUCATION

The term physical education is often loosely used as applying to all the educational factors that affect the health of children, but it is more properly employed to mean the cultivation of physique as a basis for the highest possible vitality and efficiency.

To build up the physique of children is a far more fundamental way of securing their health than to treat defects which should never have been allowed to develop. It is no less fundamental a way of securing their successful progress in school, as has been repeatedly shown by scientific tests taken among school children. Dr. W. T. Porter of the Harvard Medical School in 1893 first showed in a study of 30,000 children that the majority of those who were physically advanced beyond the average showed proportionate mental advance, and correspondingly, the majority of children who were physically retarded, gave evidence of mental retardation. To illustrate, he found that among pupils of the same age, ranging from 6 to 18 years, the average height and weight of those who were in the higher grades were greater than of those who were in the lower grades.

With the increasing light that is being thrown from

many sides on the whole subject of physical education, it is no longer possible to dismiss its claims with a few perfunctory calisthenics rung in at recess or between classes. While we cannot to-night go into a detailed study of the modern conception of physical education, I can call your attention to at least two underlying principles which will convince you of the importance of having this work under the control of experts, who can make it a dominant factor in a school system.

1. *The most powerful impressions which children receive are connected with their physical activity.*—This suggests the great educational value of active games which not only give heart, lungs, muscles, and nerves their needful exercise, but present rich opportunities for mental and moral training. Physical education should be regarded as anything but an arbitrary system of muscle hardening and lung stretching. It is a process which makes use of children's fundamental instinct for active play to cultivate in them both mental and bodily vigor; both moral and nervous poise. The physical education program should be in complete harmony with the entire school program, providing whatever necessary exercise is not supplied through other school work; and through such exercise adding further instruction and life to the other school interests. This is often done successfully by employing historic dances, folk dances, and pantomimes to lend interest to the various festivals through the year—harvest home, Christmas, May Day, historic anniversaries, etc.

We see that the successful physical director must be an educational expert. He must be no less a medical expert, for the educational aspect of physical training is no more important than its physiological bearing.

2. *Physical training must be hygienically adapted, not*

only to the age and sex of children, but to their individual needs and limitations.—No one disputes this self-evident proposition, but how often does one see it in practice? How often are children with weak hearts under observation and suitable restriction in the school playground or gymnasium? How often are girls guarded from exposure or strain during days of special susceptibility? Such necessary personal supervision can indeed be carried out successfully only when the responsibility for physical education is in capable hands, and the needs and limitations of individual children are carefully determined by a thorough system of physical examination and inspection.

This concludes the outline of the five specific needs for which our system of health supervision should provide. Compared with what most other cities are as yet undertaking, our program appears highly ambitious; viewed from the standpoint of our actual needs, it evidently contains not one unnecessary item.

MR. ROSS.—I must confess that Miss Parsons' words have carried conviction, but there is one difficulty that I see looming large in the way of her program. It will cost too much; it can never be carried out.

MR. YOUNG.—You forget that the public is with us. It is the people who pay the bills. With public sentiment in our favor, our success waits almost wholly upon the degree to which we apply the principles of scientific management to our health supervision. Few cities yet suspect the enormous increase in efficiency which the installation of scientific management would mean to their systems. High expense and low efficiency are the rule to-day. We intend to reverse this order. With this end in view we shall devote our next meet-

ing to a discussion of the principles of scientific management as applied to health supervision in schools.

SUGGESTED READING

AMERICAN SCHOOL HYGIENE ASSOCIATION. PROCEEDINGS OF THE FIFTH CONGRESS. *What Our Cities Are Doing for the Health of Our Children.*

PROCEEDINGS OF THE SIXTH CONGRESS. *Problems of School Hygiene in Massachusetts.*

DENISON. *Helping School Children*, Chapters VII, IX.

GULICK AND AYRES. *Medical Inspection of Schools.*

HOAG. *The Health Index of Children.*

HOGARTH. *Medical Inspection of Schools.*

KELNYACK. *Medical Examination of Schools and Scholars.*

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. *Ninth Year Book*, Part I. *Health and Education.*

IX

SCIENTIFIC MANAGEMENT IN HEALTH SUPERVISION

MR. YOUNG.—When two people or more unite to secure a common end they are instantly confronted by the following questions: What steps must we take to gain our end? How can we best take these steps? Which of us can best take this step and which of us that?

It matters not what the enterprise may be, whether it be to establish or conduct a church, a factory or a school system, these fundamental questions must be answered in some fashion before anything can happen. In other words, there must be agreement on some plan, some method of administration, and some form of organization.

The degree of success which an enterprise reaches, provided the human element is constant, is in proportion to the adequacy of its program, its organization, and its administrative procedure. The organization and administration of an enterprise constitute its management. To bring these two factors to their highest possible efficiency is the aim of scientific management. It is this form of management which we propose to install in our system of health supervision.

Our committee, after making a wide study of the kinds of management now current in health supervision systems, has certain plans and methods to propose, which

are based upon a scientific analysis of the organization, methods, and results they have observed. Miss Parsons will present the report.

MISS PARSONS.—Scientific management has lately become a phrase to conjure with, but it stands for no system of magic. It stands rather for the application to any kind of human employment of two simple common-sense principles, which any normal mind can grasp at the first hearing.

MRS. ROSS.—Then why has the world waited so long for business management to become a scientific art?

MISS PARSONS.—Because rule of thumb is hard to displace by scientific law. It has been no easy matter to abstract the principles underlying scientific management from the mass of details involved in practicing them. You remember Lamb's account of the origin of roast pig. It has taken the race a long time to discover the most economical and efficient way of roasting its pig. The recipe is a twentieth century discovery, fraught with tremendous importance, for it means that in time the pork barrel will hold enough for us all.

Let us now examine the two underlying canons of the "gospel of efficiency," as Mr. Taylor, the chief apostle of scientific management, calls the system, and let us see how they can apply to our system of health supervision. The first has to do with organization; that is, with the distribution of duties, or "functions," as they are called in technical parlance.

1. *Duties must be so apportioned as to make each individual in the whole body count for his maximum.*—Such an apportionment obviously requires that each person be allowed to do only such work as he is best fitted to do. This means that he must be relieved of those duties which can be performed as well by some one

whose time is less valuable, and that he be prohibited from performing duties which can be better done by some one else.

In a system of health supervision the application of this principle would affect the functions of the school physician as follows: He would be required to use his energies in finding means to promote the health of the children and in diagnosing and treating such diseases and defects as might develop in spite of his preventive efforts; he would be relieved from making inspections, first examinations and clerical records, as nurses and clerks, whose time is less valuable than his, can perform such work under his instruction, as well as he; finally, he would be prohibited from determining his own methods of diagnosis and treatment, as such decisions are best made by medical specialists.

DR. LATTI.—Miss Parsons has proposed some very daring innovations. She can't match them all in a single city in the United States to-day, but in time every one of the cities will come around to them, for the scheme is fundamentally sound.

MR. ROSS.—But——

MISS PARSONS.—Pardon me just a moment, till we set before ourselves the second principle, the one which has to do with methods of administration.

2. *Duties and tasks must be so regulated that each effort shall secure a maximum result; to this end every process and material used must conform to standard.*

MRS. ROSS.—What is meant by "standard"?

MISS PARSONS.—The term "standard" is applied to the most scientifically determined methods or specifications which have been reached at the time the standard is drawn. A standard represents neither perfection nor finality, but it does represent the best that has yet been

devised, and should therefore be strictly enforced until expert scientific study justifies changing it.

Mrs. Ross.—Do these two principles which you have stated actually stake out the whole field of scientific management? If so, it seems to me that it is merely a wonderful system of mechanics with the human element practically eliminated. You fit your man to his groove, gear him up to the highest speed, and then press the button. I should fear that our health supervision system would turn out to be merely an automatic mechanism. We want the nurses and doctors to remain human, to be interested in the children themselves. Isn't there danger that their judgments will be paralyzed by too much overhead regulation?

MISS PARSONS.—There is no danger of this. It is true that the principles, in the simple form stated, sound harsh and mechanical. That is merely because they had to be put abstractly. As a matter of fact, the human element, i. e., the interest, enthusiasm, coöperation, and prosperity of each man in the system is the very highest concern in scientific management.

MR. MARTIN.—I thought the highest concern was increased profits.

MISS PARSONS.—Increased profits of one kind or another—wealth, leisure, human comfort, health or happiness—are undoubtedly the greatest motives for developing scientific management, but the chief concern in achieving this end must be to develop first-class men and women among the workers. This is one of the duties, the most fundamental of all, which was referred to in the bare statement that every process and material used in discharging a duty should conform to a standard.

To arouse the best efforts of workers, to enlist their interest and initiative, is a critical task, which can suc-

ceed fully only when based upon the results of an accurate study of the motives which influence men and women; in other words, upon psychologically sound standards. Not all supervisors can be expert psychologists, but they can increase their efficiency greatly by adopting standards set by experts in human nature.

MEDICAL INSPECTION IN SCHOOLS

Let us consider now in some detail the bearing that these principles of scientific management have upon our proposed system of health supervision. I shall not attempt to outline a complete set of regulations for organization and procedure. We could not possibly cover so much ground in one evening, but I wish to bring out certain points where the application of these principles will give our system an advantage over any single system that we have yet observed. We will first take up the medical department, which at our last meeting we agreed should be responsible for inspection, examination, and treatment of school children.

Medical inspection is almost everywhere carried on at enormous waste of the physician's time and the public's money. This is due, in part, to unscientific organization; in part, to unscientific method.

ORGANIZATION OF MEDICAL INSPECTION

Let us consider first the organization. When doctors are assigned to make inspections and first examinations of school children, as is usually the case where these steps are taken, they are often required to perform a

great deal of work that can be done as well by nurses and even teachers and clerks. Such an arrangement violates the first canon of scientific management, which prohibits an individual from doing work that can be done as well by some one else whose time is less valuable.

MRS. ROSS.—Do you mean that much of the work of inspection and examination can be carried on without doctors?

MISS PARSONS.—Exactly.

MRS. ROSS.—Then what becomes of the doctor's divine right of diagnosis?

MISS PARSONS.—That remains quite intact. The doctor is still needed to pronounce the authoritative word upon conditions of the body, but he can be immensely relieved in the routine of physical examination and inspection work by trained assistants who do not happen to possess the mystical power inherent in the symbol M. D. Let me illustrate by citing a very interesting experiment which has just been carried out in New York.

In 1911 the Bureau of Municipal Research made a test which brought out the fact that the cost in New York of physicians' inspection for contagious diseases was 58.1 cents per 1,000 children per day, while the cost of nurses' inspection was 36.96 cents, a difference of 22.14 cents, or 38 per cent. Think what the saving to New York would be if its 750,000 children were to be inspected for 22.14 cents less per thousand per day than under physicians' inspection. This amount, which would be about \$33,000, would provide for a year all necessary treatment for the chronic defects of about 60,000 children; 45,000 of whom would require attention for their teeth, 30,000 for verminous conditions, 12,000 for defective vision, 6,000 for mouth breathing, deafness, and dis-

charging ears, and 3,000 for diseased scalps, chronic eczema, and ringworm.*

MRS. ROSS.—Might not the children be getting all this treatment at the expense of those inspected by the nurses? Economy is good, of course, but efficiency is better. Did the nurses really perform the inspection work as well as doctors would have done it?

MISS PARSONS.—Precisely as well. In the four schools where the nurses handled all the work of inspection and exclusion, not one of the forty-one exclusions which they made was found to have been unnecessary, nor was there one case found of a child passed over who should have been excluded. The Bureau of Municipal Research, which carried on this experiment, recommended that the inspection and exclusion of contagious diseases for the entire city be given to the nurses.

MRS. ROSS.—Was this done?

MISS PARSONS.—It was in 1912, and the results have already shown the wisdom of the arrangement to be past argument. Though the force of school physicians was reduced between one-half and one-third, and the number of nurses not proportionately increased, there has been a marked increase in the number of physical examinations, inspections, and corrections of physical defects of the school children. Owing to time saved from inspection work the school physicians have averaged an increase of about 100 per cent. in the number of physical examinations they have made. As a result of the greater number of nurses employed, the number of inspections has been 25 per cent. larger than in the previous year, and the number of cases receiving treatment about 10 per cent. greater. Furthermore, this added efficiency has been

* Based upon a study of cost of school clinics in *Medical Inspection of Schools*, by A. Hogarth, Chapter XV.

brought about at an outlay of \$4,800 less than the outlay of the previous year under the old régime.*

MRS. ROSS.—Has the new plan in New York proved popular among those engaged in the work?

MISS PARSONS.—Not altogether. Some of the doctors feel abused at the curtailment of their duties, and some of the nurses object to the burden of their new responsibilities. A little friction at the beginning is quite inevitable when such a radical change is being put into force. Prejudices will gradually yield, however, for the nurses' capacity both to inspect and even to examine children to a certain point has been demonstrated over and over again, not only in experiments but in actual practice.

In Cambridge, England, in 1906, the school nurse was given authority by the medical officer to exclude cases, issue return certificates, and even to treat certain minor afflictions on her own initiative. Her service has proved eminently satisfactory. Massachusetts, the only state up to 1911 to require school physicians in every town and city, has also demonstrated the fitness of the school nurse both for the inspection of contagious diseases and the examination for defects. The smaller towns, after the mandatory legislation went into effect, had at first great difficulty in arranging for school physicians on account both of the expense and also of the professional jealousy of the private practitioners, who naturally objected to having their own young patients pronounced upon by a rival physician and a political appointee at that.

By a liberal construction of the law a nurse was appointed in Canton, Mass., in 1908, to perform for the school children what would have been expected of a physician. She made inspections for contagious diseases,

* *A Report upon the Health Conditions in the Public Schools of New York City*, THE MEDICAL RECORD, August 31, 1912.

examined children for physical defects, sent sick and defective children to their family physicians for treatment, and saw that they received it. Those too poor to pay for treatment she took to a free dispensary in the nearest large town (Boston). In addition to these duties she carried on educational work in hygiene with both parents and teachers. This nurse proved so efficient as a school health officer and gave so much satisfaction to the whole town, including the doctors, that one small place after another in Massachusetts has followed the example of Canton, leaving the health supervision of the school children entirely to a nurse. Massachusetts has not been alone in this experiment. Among other states, California is demonstrating the ability of nurses who, in San Francisco and Oakland, conduct practically all the routine of examinations.

MR. ROSS.—You spoke of school physicians at present being assigned to do teachers' and clerks' work as well as nurses' work. How does that come about?

MISS PARSONS.—Much of the routine of physical examination, such as taking weights and measures and setting down records, can actually be performed by teachers and clerks and even pupils, saving not only the physicians' time but the nurses' as well. There is no justification for the costly combination of doctor and nurse now in vogue, by which the doctor plays nurse and the nurse plays clerk.

MR. ROSS.—It seems to me your nurse-teacher-clerk combination must necessarily lessen the value of the examination.

MISS PARSONS.—Not at all. The clerks or the older pupils are as efficient as doctors or nurses for taking down records; the teachers as reliable as doctors for making preliminary eye and ear tests; and the nurses

themselves, as we have seen, are as competent as ordinary physicians to detect other physical abnormalities which should be referred for expert medical advice.

DR. LATTA.—No doubt many physicians would question Miss Parsons' last statement regarding the diagnostic abilities of nurses. As a matter of fact neither a nurse nor an ordinary doctor is qualified to say that a child is really sound. The powers of an expert diagnostician are required to secure any sort of certainty in such a matter. Occasionally we find a most healthy appearing child who is really suffering from a fatal disease. The symptoms of kidney disease, for instance, are likely to escape any but expert methods of detection. Such cases are rare, however, and while over 50 per cent. of the nation's children even now are having no physical examination whatever, are we not wasting time to discuss impracticable refinements of methods for eliminating all error in examination?

What we want now is to find means of giving all our 25,000,000 school children the advantage of at least some sound health supervision. To have expert physicians examine every member of this enormous army is manifestly impossible; but nurses under physicians' direction are likely to prove equal to the task.

MR. ROSS.—May I ask whether a distribution of physical examination work between teachers and nurses, such as Miss Parsons described, has been tried anywhere?

MISS PARSONS.—It has. Massachusetts, the leading state in providing for the physical welfare of children, leaves the preliminary eye and ear tests to teachers, with the thorough endorsement of the oculists themselves. There is really nothing, they say, in the training of an ordinary physician that makes him a better tester of vision and hearing than an intelligent teacher. Minne-

sota is even training her teachers to make general physical examinations, the claim being that trained teachers can recognize 90 per cent. of the defects of children.

MRS. ROSS.—I was interested to learn, not long ago, that Swarthmore College, recognizing the direct responsibility of teachers toward the health of children has actually added a course of medical inspection to its teachers' preparatory course. School children are brought to the college every week and the students under the supervision of the physical director are taught the methods of inspection and examination.

MR. MARTIN.—This is all very bewildering to me. It seems to me that such innovations will tend to unseat the doctors entirely.

DR. LATTI.—Oh, not at all. The effect will only be to seat them higher up. The whole purpose of this sharply economical distribution of duties is, as you remember, to make each individual count for his maximum. The ordinary physician, as now trained, is working at his maximum when he is diagnosing and treating disease, not when he is sorting out healthy from unhealthy children. We must save him for his function as a healer, a necessity which was thoroughly discussed at our last meeting.

MRS. ROSS.—I am rather surprised to hear you emphasize so strongly the healing function of the school doctor. I thought the modern doctor was to keep children well and develop their health.

DR. LATTI.—So he is; but, while our schools still contain between 60 and 80 per cent. of defective children, there is much old-fashioned treating to be done, and the old-fashioned school doctors can't employ their time better than by doing it. In the meantime, not a moment should be lost, of course, in developing a new breed of doctors and nurses who shall be hygienists first of all,

rather than healers. Children under their care, from birth and before, will not develop the hideous array of defects and diseases now prevalent among all the children of the nation, regardless of wealth or station.

To return to the question of substituting nurses for doctors in inspection work: I regret to admit that some of the motives which prompt resistance to this plan are not entirely concerned with the welfare of the children. It is a disconcerting thing, for instance, to a politically inclined medical chief to see \$75,000, more or less, about to be diverted from the support of a body of male medical inspectors who on occasion can serve as a forceful political instrument. It is also disconcerting to the inspectors to contemplate losing their jobs. I am far from implying that all doctors who oppose the inroad of the school nurse do so with any sordid motive. Many of them are honestly imbued with faith in their own mystic powers. I merely say that the economic motive strengthens the conservative element in the medical profession which has always resisted innovations, tooth and nail, since before the day when Hippocrates horrified society and called down the anathemas of his fellow doctors by announcing that fits developed from natural causes and were not malign gifts from the gods. Magic and common sense have waged immemorial combat in medicine, but we trust that common sense, with her powerful handmaid—modern science—will, from now on, hold the upper hand.

MISS PARSONS.—Let me call your attention now to the second weak spot in the organization of most inspection systems. The change involved, contrary to the one just discussed, will require a greater outlay, but will also increase the efficiency of the service. I refer to the common practice of leaving to untrained teachers

the actual detection of contagious diseases. This is in direct violation of the principle we stated; that individuals should be prohibited from performing duties which can be better done by some one else.

What is called physicians' inspection is primarily teachers' inspection, the physician inspecting only such cases as the teachers select. The result is that many a case requiring expert advice misses the untrained teacher's eye, and never passes under the physician's. On the other hand, much of the physician's time is wasted in sifting out cases unnecessarily sent by teachers. A physician's class-room inspection made in 1910 among 1,784 school children of Philadelphia showed that about 12 per cent. of those needing treatment for minor contagious diseases had failed to be observed by the teachers. On the other hand, in a single month of the same year, one inspector had 569 pupils sent to him by teachers, only 14 of whom (2.4 per cent.), in his judgment, were proper cases for his attention. Medical inspection is surely a curious misnomer for teachers' inspection of this sort.

MR. ROSS.—What better plan is there?

MISS PARSONS.—The children should have periodic inspection by people who know how to give it. Teachers, unless specially trained for it, do not know how. Nurses do. New York and a number of other cities are now requiring a direct monthly inspection of all children by nurses. The results have already far more than justified the wisdom of the arrangement.

In this brief discussion of the organization of medical service we shall not need to take up the duties of supervisors. Most systems are already well supplied with these functionaries. Their methods rather than their functions call for scrutiny, and these are of so much

importance that we shall have to give a separate evening to their consideration.

METHODS OF MEDICAL INSPECTION

In considering methods, we must hold carefully before us the principle that duties should be so regulated that each effort shall secure a maximum result, and that to this end every process and material used must conform to standard.

It is at this point in current medical inspection that we encounter chaos. The conception of a standard as being the only means for securing both the greatest efficiency and economy has exerted no influence on most of our systems. We find almost nowhere scientifically fixed regulations concerning many of the following items: kinds of communicable diseases and symptoms for which inspection is necessary; kinds of defects and symptoms for which examination is necessary; manner and frequency of inspections and examinations; character of treatment required; time, place, and manner of giving it; length of quarantine for various diseases; following up of excluded cases to insure proper treatment and quarantine; further precautionary measures against contagion; disinfection, exclusion, and treatment of exposed children; making, filing, and using records and reports.

After a discouraging search for a scientifically managed system of medical inspection we at last came upon one which had recently been organized by management experts in one of our larger cities. This particular city had suddenly waked up to the fact that its medical inspection service, on which it had long prided itself, was not making good; and it had promptly called in experts

to set the system on its feet. Like many another city, this one had assumed that its medical inspectors were carrying out the following important steps:

1. Inspection for contagious disease.
2. Quarantine for contagious disease.
3. Treatment of minor contagious disease.
4. Yearly physical examination of school children.
5. Referring of cases demanding treatment to proper authorities.
6. Following up of cases referred.
7. Consideration of special cases.
8. Making of prompt and accurate reports.
9. Directing and coördinating efforts under central supervision according to information from records and reports.

Bearing in mind these points, you will be interested to note, item by item, the contrast between what medical inspection in the city under discussion was assumed to be and what it really was. This is what the investigators found:

1. *Inspection for Contagious Disease.*

(a) Inspection work was carried on with enormous waste of time. During the year, routine visits to all schools every day had occupied 60 per cent. of the medical inspectors' time, with no greater result than the finding of 25 cases of major contagious disease among 174,000 children. Major contagious diseases are seldom found in schools, for the obvious reason that their severity from the first onset usually keeps children at home.

MRS. ROSS.—Isn't this large expenditure worth while to discover even a few cases? The 25 cases which Miss Parsons cited might have multiplied to 2,500 cases if the doctors hadn't caught them in time.

MISS PARSONS.—To be sure; but it needn't have re-

quired 28 doctors working for a year to do it. We have already seen that nurses could have done the inspection work; but quite apart from that consideration, the doctors were wasting quantities of time by their methods of inspection. They were constantly paying hundreds of visits to schools where there was nothing for them to do. This waste of their time made the cost of the discoveries that they did make many times as great as necessary.

MR. ROSS.—How could this cost have been reduced?

MISS PARSONS.—By so simple a method as the use of the telephone. Since the physicians, in all cases, inspected only those children whom the teachers picked out, they would have saved an immense amount of time by confining their visits to those schools where they were needed to pronounce on suspicious cases. Telephone calls could have brought them at any time. This point introduces us to the next defect which the experts noted in the system.

(b) The system did not provide for periodic inspection of all school children. Only those children who were selected by teachers, as occasion arose, were seen by the inspector.

2. *Quarantine for Contagious Disease.*

(a) Pupils were often allowed to return to school before the expiration of the exclusion term specified in the state law.

(b) There was wide variation among inspectors, as to exclusion for similar diseases, with the result that there was much friction between the department of contagious diseases, on the one hand, and principals and teachers on the other. For instance, in the handling of suspected diphtheria cases, some inspectors excluded pupils immediately upon beginning the test of cultures from

the latter's throats; others waited until the presence of the disease was determined by the diphtheria bacillus developed in the culture. In the handling of minor contagious diseases, exclusion authority was often abused. For example, of two inspectors working in similar schools having nurses, one was found rarely to exclude a child who could be treated by the nurse, the other excluded almost all the children, thus depleting the school enrollment and preventing proper treatment by the nurse. Eighty-nine per cent. of the total number of exclusions were for causes other than acute diseases. Arbitrary wholesale exclusion for lack of evidence of recent vaccination was one of the contributing factors to this high percentage.

3. *Treatment of Minor Contagious Disease.*—There was no uniform practice in school or home treatment for minor contagious diseases.

4. *Yearly Physical Examination of School Children.*

(a) Instead of each child's receiving an examination every year, as was called for, an investigation among 5,910 children in attendance during five years showed that 9 per cent. had never been examined, 36.1 per cent. had been examined only once, 39 per cent. twice, 15 per cent. three times, 9 per cent. four times, and none five times.

(b) There were no definite standards as to what should be considered physical defects. Inspectors who were specialists in private practice were accordingly found to discover their "specialties" in undue proportions to the neglect of other defects.

(c) There were no working schedules or uniform methods provided for the examination of pupils. Each inspector, therefore, chose his own method of making eye and ear tests, which, in many cases, were inaccurate.

(d) There was wide variation in the time given to single examinations. This varied from six seconds to six minutes. A careful test has demonstrated that an examination, exclusive of any clerical work, cannot be properly given in less than seven minutes.

(e) Inaccuracy of examinations was shown by the re-examination of 200 children representing twelve inspectors. The inspector who was detailed by the chief of the division to make a reëxamination found 145 defects undetected in the first examination, and 57 previously recorded that were unworthy of notice.

5. *Referring of Cases.*—Cases were not systematically referred to nurses, parents, and doctors. Cards were often filled out with recommendations that were not specific and given to children only.

6. *Following Up of Cases.*—Cases were not followed up, but lost sight of. There was no standard of what a treatment should be. Pupils with errors of refraction were reported "treated" when supplied with an eye-wash; those with adenoids, when they began to use a gargle; those with defective teeth, when they were given tooth brushes. A questionnaire test showed that, out of 1,013 pupils recommended for treatment for defective vision during five years, only 14.9 per cent. were provided with glasses; of 615 having enlarged tonsils or adenoids only 11.2 per cent. had received adequate treatment.

7. *Special Cases.*—Special cases referred by principals and teachers were incompletely reported, neither uniformity nor system being used in the reports.

8. *Reports.*

(a) Great variation and laxity were shown in filling out and turning in reports of contagious diseases. It was a common practice for an inspector excessively zeal-

ous to show a very large number of exclusions, to report the same pupil excluded for the same cause several times during one period of exclusion.

(b) Reports of examinations, reexaminations, and results of recommendations for treatment were not made *promptly* to the chief medical inspector. Their *inaccuracy*, moreover, made them practically useless. An investigation of 200 children, representing 227 physical defects reported by thirteen inspectors as treated, showed that only 43 per cent. of the defects were treated in any proper sense.

9. *Administrative Control and Information.*

(a) There was no central control and supervision of exclusions and readmissions of pupils.

(b) There was no adequate administrative control of the inspection system as a whole which was indicated by the fact that the inspectors were found to be averaging in the time given to their work less than one-half of the five hours a day they were expected to give.

(c) No accurate information could be obtained for the entire city as to school days lost through exclusion, because the case records at the central office were either incomplete, inaccurate, or altogether lacking, and because no provision was made in the records at the schools for currently recording the causes of absence.

(d) The records in the central office were not kept up; cards were missing or left unfiled for more than six months at a time. In April, 1909, there were 3,063 report cards relating to the school year 1908, still tied up in the bundles in which they had been received.

I have thought it worth while to run over the shortcomings of this system in some detail because similar ones are bound to crop out in every town that doesn't specially guard against them. Even a small town, like

our own, which presents no great administrative problems, needs precisely as good a plan and as clear-cut methods of management as the largest city. Good intentions and fine ideas about the health of children do not automatically result in healthy children.

MR. ROSS.—Those people didn't know how to do business. I could have run their system better myself, and I don't know an adenoid from a potato.

MISS PARSONS.—It was just such administrative knowledge and experience as you have, Mr. Ross, that they needed and fortunately obtained. Let us now go over the items as they stood after the experts put the system on its feet.

1. *Inspection (a) and (b).*—Much time formerly wasted is saved by substituting for a daily visit by the inspector to each school a weekly visit to each school room. The teacher is thus no longer responsible for detecting contagious diseases, nor are any children left uninspected. Any day, however, that the teacher notices suspicious symptoms, she can secure an inspection by telephoning to the school inspector at a specified time. The weekly schedule is subject to change in case of unusual stress, as in epidemics. (Form 4, page 184.)

2. *Quarantine for Contagious Diseases.*

(a) The legal length of quarantine is now observed, as prompt records, carefully supervised, check laxity and irregularity in this matter.

(b) Conditions warranting exclusion are accurately stated in the regulations and an inspector is now not permitted to exclude a pupil for a minor contagious disease more than one day without the permission of his immediate superior. Exclusion for vaccination is also obviated by requiring the inspector to gain satisfactory evidence before pupils are enrolled.

3. *Treatment for Minor Contagious Diseases.*—Minor contagious diseases are now treated at school whenever possible.

4. *Yearly Examinations.*

(a) Every child is now examined when he enters school, and regularly every year thereafter. If need arises in special cases for an earlier examination, this is given. This regulation is enforced by a system of prompt reports and close supervision.

(b) and (c) Examinations and inspections are made according to a prescribed schedule, which definitely determines what defects to look for, how to look for them, when and how to treat them, and how to record the results of examination. (Form 1, page 179.)

(d) and (e) To secure the greatest possible uniformity in standards and methods, staff conferences and clinics are held at regular intervals.

5. *Referring of Cases.*—Carbon copies of records are now sent promptly to all parties interested—central office, teacher, and nurse; the inspector retaining a copy. The nurse is responsible for informing parents and seeing that the treatment recommended is carried out; the teacher for giving what special consideration the case may require; the inspector for bringing the case to a conclusion, and the central office for exercising a general supervision until the completed record is received. (Form 1, page 179.)

6. *Following Up of Cases.*—Cases are now easily followed up, as a record is in the hands of the four parties interested. A definite standard for the necessary treatment, and the result necessary to warrant the discharge of the case, makes the procedure for each case clear.

7. *Special Cases.*—Thorough examinations of special cases referred by principals and teachers are now given

at the weekly visits of the inspectors, and are reported at once, as in the case of regular examinations.

8. *Reports.*

(a) Accurate card reports of inspections are promptly sent to the central office, where they are kept on file.

(b) Accurate reports of reexaminations and results of treatment are made on the card that recorded the original examination, and as soon as the cases are dismissed are sent to the central office, where they are filed.

9. *Administrative Control and Information.*

(a) and (b) The central administrative control has been greatly strengthened by the establishment of standards of procedure; a system of simple records, including time reports (Form 2, page 181), which are turned in promptly and used; and a program of stated staff conferences and clinics for securing the greatest possible uniformity in standards and methods.

(c) and (d) Complete records, intelligible to the public, of the physical condition of the school children, as well as of the results obtained through recommended treatments, are now available in the central office. These records include a monthly summary of all cases handled during the month (Form 3, page 183); new cases, those still pending, and those dismissed as cured. This summary is published in health news columns of the newspapers every month, together with statements regarding the cost of handling the various items.

MR. YOUNG.—Those people are certainly getting their money's worth now, but will they continue to? How long will it be before the varnish wears off their system? It sounds too good to last.

MISS PARSONS.—If it doesn't last it will be due to the grossest neglect of city officials and citizens. In

ordinarily honest and efficient hands this system will stand wear.

MR. ROSS.—I believe you are right, Miss Parsons. When we installed scientific management in our factory we didn't change a single important manager or foreman, but the new system doubled our profits in a year.

MISS PARSONS.—Double profits in health are what we are figuring on in this medical inspection system. Let us turn now to what scientific management has to say in the department of sanitary supervision.

SANITARY INSPECTION OF SCHOOLS: ORGANIZATION AND METHODS

Sanitary inspection is usually carried on in connection with medical inspection, owing to a curious tradition that it takes a doctor to determine whether enough air is entering a room, whether children are using sanitary drinking cups or the thermometer stands too high. These items have not the remotest connection with surgery, obstetrics, materia medica, or with any of the other arts which go to make up the doctor's distinctive repertoire. The smattering of sanitary knowledge that is offered in an ordinary medical course, and which constitutes the physician's only claim as a sanitary authority, is distinctly less than what is included in a good course in domestic science.

However, it is often convenient for the medical inspector, physician or nurse, to examine children and buildings at the same time, and there is no harm in this arrangement if the sanitary standards are not left to the determination of these inspecting officers. Modern sanitation has developed into a fine art. Experts only

are qualified to set standards, and the inspecting officers for schools or homes, whoever they may be—doctors, nurses, or policemen—must make their reports on the basis of standards set or ratified by expert sanitarians. Moreover, the form for inspection records must be so devised as to provide for a thorough and accurate report on every item. It is an evidence of the extreme youth of the inspection systems in this country that most of them have not yet discovered these two simple and self-evident requirements.

Prevailing methods of sanitary inspection are well illustrated in the report on the city system we have been considering. The duties of the sanitary inspectors in this city were as follows:

1. The exact determination of the sanitary construction and equipment of each school building, as a basis for a permanent record.

2. Systematic and periodic inspections to guard against new conditions harmful to health.

These duties, it was found, were being carried out in the following manner:

1. *Permanent Records of the Sanitary Construction and Equipment of School Buildings.*—There were no such records.

2. *Periodic Inspections.*

- (a) Periodic inspection, which was made at the opening of the year, was insufficient to tell the whole story of conditions that vary through the year: e. g., heating, ventilation, sanitation.

- (b) No sanitary standards were prescribed for use in reports, each inspector being allowed to establish his own standards. The making of reports was regarded as a mere form by inspectors, who based their statements concerning capacity of rooms, size of windows,

etc., on general estimates, and who frequently omitted salient items. For example, among all the reports, only five recommended better ventilation, while the department of buildings admitted that there were 162 buildings whose ventilating systems furnished less air than the law required. Similarly, only fourteen recommended increased toilet facilities, while the Board of Education admitted that there were at least forty-three schools deficient in this respect.

(c) The reports were apparently recognized as worthless by the Board of Education, which paid no attention to them. Out of 131 recommendations submitted in October, 1909, none had received any consideration up to April, 1910.

(d) There was nowhere maintained a complete current record of information necessary for the improvement of the hygienic conditions in school buildings, nor was there a record showing improvements obtained through the service of inspectors.

The following is a condensed statement of the changes brought about through the revision of the system.

1. *Permanent records* of the sanitary construction and equipment of school buildings have been made and filed at the central office.

2. *Periodic Inspection.*

- (a) Inspection is now made three times a year, in order to note conditions subject to variation: for example, heating and ventilation.

- (b) A definite schedule is used to record the inspections which are now governed by facts instead of individual judgments. (Form 5, pages 187-8.)

- (c) and (d) The information in these reports is considered in connection with the permanent records relating to the respective buildings, transferred to these rec-

ords and filed. Records showing improvement obtained as results of reports are filed with reports.

It will not be necessary to go into further detail tonight to illustrate the need for scientific regulations in every department of our health supervision system. The same general method of administration as we have outlined in the two departments discussed is obviously necessary for securing real success in the other branches of the service: hygienic regulation of school and home activities, health instruction and physical education.

MR. MARTIN.—The changes that transformed these poor systems into effective ones all sounded very simple and easy, though apparently it required experts to bring them about. As you were putting the contrasted items before us, Miss Parsons, I tried to analyze the essential elements that distinguished the systems before and after treatment. Would you mind stating what you consider the fundamental differences?

MISS PARSONS.—In a word, a system of management, to be puncture-proof, must provide for each of these things: a good plan, accurate records, and thorough supervision. These provisions can be secured only through a rigid application of the principles of scientific management, i. e., proper distribution of duties, and observance of standards. The system we first considered this evening had a good general plan, but it broke down through having inaccurate, ill-kept records, and almost no supervision. It is absolutely essential for the supervising officer, by means of strict records, to keep in close touch with the work of every inspector; to control the quantity and quality of service performed by each; to apportion work in accordance with the requirements of districts, schools, or individual pupils; and to tell the story of work done and needs still to be met in such a way as to

command the intelligent interest, confidence, and support of the community.

MR. ROSS.—Miss Parsons makes an important point when she bespeaks the coöperation of the community. The citizens are the real proprietors of these proposed health factories. No plan, however perfect, can thrive without their support.

As citizens and taxpayers, we must all insist on being currently and accurately informed of what our system is accomplishing; how much health it is manufacturing; what it costs; what it saves; how it can be yet further improved. We must aid in the formulation of constructive plans when there is need, and we cannot rest till plans for the health of our school children have been actually transmuted into health itself.

SUGGESTED READING

ALLEN AND SNEDDEN. *School Reports and School Efficiency.*

MINNESOTA STATE BOARD OF HEALTH. *An Outline for the Health Grading of the School Child.*

RUSSELL SAGE FOUNDATION. *The Measurement of Educational Processes and Products.*

TAYLOR. *The Gospel of Efficiency.* American Magazine, March-May, 1911.

The Principles of Scientific Management.

TERMAN. *Professional Training for Child Hygiene.* Popular Science Monthly, March, 1912.

X

RED TAPE

MR. YOUNG.—At our last meeting Miss Parsons sketched for us the transformation of a nerveless medical and sanitary inspection system into one that was highly efficient. Our limited time prevented us from getting more than a hint of the methods which brought about this transformation, but we did receive the definite impression that the secret of the change lay almost entirely in a reorganized system of records and supervision.

MR. ROSS.—In other words, the work amounted to almost nothing until it was well watched and accurately recorded.

MR. MARTIN.—Does this mean that doctors and nurses are shirks or fakirs unless there is some one always at their heels? I can't believe that for a moment.

MRS. ROSS.—Nor I. In spite of the evidence in last week's report, I can't quite abandon the idea that the best way to win good service is to put people on their honor and to measure their efficiency by the results they accomplish. Surely this is better than to carry on a system of espionage.

MISS PARSONS.—The question is not primarily a matter of integrity and good intention, but of intelligent procedure and economy in the use of time. Effective supervision, on the other hand, does not mean a system of espionage; it means rather the intelligent direction

and coördination of the service; the analysis, classification, and interpretation of results; and the establishing of standard administrative methods.

MR. MARTIN.—Isn't there danger of over-standardizing and over-mechanizing in the field of professional service? I can readily see the necessity of standardizing the speed of machines or a method of keeping accounts. When it comes to matters requiring expert medical judgment, however, I should fear that laying down hard and fast standards would check individual initiative and would degrade professional service to the dead level of routine.

MISS PARSONS.—That could happen only if a standard were a thing impossible to change, but such is not the case. As was brought out in our last discussion, a standard is not to be regarded as something final and unchangeable, but merely as the most effective method or equipment that scientific inquiry has discovered up to date. In fixing upon a standard of procedure in the medical examination of school children there is nothing that precludes the modification of the standard, provided only the change be based upon the same rigid test that was applied when the standard was originally prescribed.

MR. MARTIN.—May we not have this point illustrated by a concrete example of standardization in some field of professional service?

DR. LATTA.—An excellent example is in the practice of surgery, which, I suppose, would be accepted as the highest type of technical skill in handwork. In teaching the technique of an operation upon the eye, for instance, the instructor prescribes every step in the process, every movement, and every instrument to be used. Not until the student masters every detail of the operation may he undertake its execution. Having mastered the

best standard which surgical practice has already established, the student is free to use his initiative and ingenuity in raising the standard, but not before. No one would think of criticising surgical practice on the ground that it interfered with professional initiative or placed obstacles in the way of rational progress.

MR. YOUNG.—I should be interested to have Miss Parsons tell us just how far standardization should be carried in the supervision of medical examination and nurses' service.

MISS PARSONS.—The first requisite of efficient supervision is that accurate, complete, and prompt information be available to the supervisor. In other words, the supervisor must know just what the inspectors are doing and what they are failing to do; and he must get this knowledge in time to check up the results and correct mistakes, instead of getting it in an annual report long after the time when he can make most effective use of it. For this purpose, it is absolutely essential that a system of current reports be installed that will produce the necessary information promptly and in a form readily available to the supervisor.

MR. YOUNG.—Do not most systems of medical examination include weekly or monthly reports that serve precisely the purpose you have in mind?

MISS PARSONS.—Practically all of them provide some form of current report; but none of them, so far as I have discovered, meets adequately the requirements of scientific management. The fundamental basis of all summary reports, of course, is the primary record of individual facts observed. In medical examination these primary facts are contained in the record of conditions found in individual children. Very commonly the character of this record is left almost wholly to the discre-

PERCENTAGES OF PHYSICAL DEFECTS FOUND BY 31 MEDICAL EXAMINERS AMONG SCHOOL CHILDREN OF PHILADELPHIA
FEBRUARY 1909.

INSPECTORS	CHILDREN EXAMINED	DEFECTIVE VISION		HYPERTROPHIED TONSILS		DEFECTIVE NASAL BREATHING		DEFECTIVE TEETH		NORMAL		
		25%	50%	25%	50%	25%	50%	25%	50%	25%	50%	% of TOTAL
1	270	19.6	10.4	8.7	9.3	3.7	4.4	84.8	85.4	84.8	85.4	84.8
2	256	16.8	10.4	9.0	9.3	3.7	4.4	84.8	85.4	84.8	85.4	84.8
3	286	16.8	10.4	9.0	9.3	3.7	4.4	84.8	85.4	84.8	85.4	84.8
4	340	39.6	10.4	4.2	4.4	1.0	21.1	87.6	87.6	87.6	87.6	87.6
5	384	10.4	10.4	4.2	4.4	1.0	21.1	87.6	87.6	87.6	87.6	87.6
6	320	16.8	10.4	9.0	9.3	3.7	4.4	84.8	85.4	84.8	85.4	84.8
7	284	17.3	10.4	9.0	9.3	3.7	4.4	84.8	85.4	84.8	85.4	84.8
8	281	17.3	10.4	9.0	9.3	3.7	4.4	84.8	85.4	84.8	85.4	84.8
9	433	18.9	10.4	4.2	4.4	1.0	21.1	87.6	87.6	87.6	87.6	87.6
10	281	17.3	10.4	9.0	9.3	3.7	4.4	84.8	85.4	84.8	85.4	84.8
11	324	12.6	10.4	6.2	6.2	1.3	11.3	88.3	88.3	88.3	88.3	88.3
12	300	9.0	10.4	8.3	8.3	0.3	11.3	88.3	88.3	88.3	88.3	88.3
13	169	1.2	10.4	8.3	8.3	0.3	11.3	88.3	88.3	88.3	88.3	88.3
14	424	13.2	10.4	0.23	0.23	30.9	2.4	47.9	47.9	47.9	47.9	47.9
15	376	12.9	10.4	14.5	10.0	10.0	1.3	46.9	46.9	46.9	46.9	46.9
16	299	16.0	10.4	10.7	0.3	0.3	3.3	88.3	88.3	88.3	88.3	88.3
17	426	11.7	10.4	9.7	0.3	0.3	5.1	83.2	83.2	83.2	83.2	83.2
18	313	8.1	11.5	11.5	0.3	0.3	5.1	83.2	83.2	83.2	83.2	83.2
19	281	28.0	10.4	2.1	0.3	0.3	2.3	80.3	80.3	80.3	80.3	80.3
20	388	28.0	10.4	2.1	0.3	0.3	2.3	80.3	80.3	80.3	80.3	80.3
21	237	3.8	10.4	3.4	0.4	0.4	0.4	97.3	97.3	97.3	97.3	97.3
22	271	16.3	11.4	11.4	0.3	0.3	3.8	86.2	86.2	86.2	86.2	86.2
23	160	20.3	11.4	6.3	2.3	2.3	2.3	87.7	87.7	87.7	87.7	87.7
24	347	5.3	12.4	12.4	0.3	0.3	2.3	97.3	97.3	97.3	97.3	97.3
25	340	19.7	22.3	21.3	0.3	0.3	2.3	97.3	97.3	97.3	97.3	97.3
26	305	10.6	18.0	18.0	1.5	1.5	2.0	97.3	97.3	97.3	97.3	97.3
27	393	11.4	18.0	18.0	1.5	1.5	2.0	97.3	97.3	97.3	97.3	97.3
28	318	22.1	15.5	15.5	4.4	4.4	2.8	97.3	97.3	97.3	97.3	97.3
29	323	18.1	12.4	12.4	0.8	0.8	1.5	99.3	99.3	99.3	99.3	99.3
30	402	11.7	9.7	9.7	8.6	8.6	0.2	70.1	70.1	70.1	70.1	70.1
31	326	16.7	17.5	17.5	8.6	8.6	2.4	83.4	83.4	83.4	83.4	83.4

"SPECIAL INTERESTS" IN MEDICAL INSPECTION.

This wide variation among inspectors in the number of defects observed was the natural result of lax supervision and lack of standards.

tion of individual examiners. The inevitable result is great variation in the form, order, and definiteness of the records. It has repeatedly been found that, unless there is a prescribed schedule which medical inspectors are required to follow in their work, some of the most obvious physical defects will be slighted or entirely overlooked by certain inspectors. One inspector, for example, may have an exaggerated interest in children's adenoids, and pass over defects of vision, as if he himself were blind. Another inspector, with special interest in visual defects, may find that most children need glasses, but fail utterly to note the presence of decaying teeth. We have prepared a chart which brings out this tendency to specialization among the inspectors in one of our largest cities.

MRS. ROSS.—How can this mental astigmatism of medical inspectors be corrected? Isn't it a natural and inevitable result of differences in training and native interest?

MISS PARSONS.—It is natural, but by no means inevitable. By laying down precise standards of method and procedure to be observed in the routine of medical examination; by instructing inspectors carefully concerning the importance and meaning of these standards; and by the proper exercise of control on the part of supervisors, the eccentricities of medical inspectors can be almost entirely eliminated. For this purpose it is essential that the blank forms upon which inspectors make their records of individual examinations and their summary reports be so devised as to induce completeness, definiteness, and uniformity in the examination of children, in the necessary follow-up work, and in the reports of time distribution and results obtained. The four blank forms that we wish to submit as part of our report

have been devised to accomplish these purposes. I will ask Mr. Ross, who has helped us greatly in preparing these forms, kindly to explain them to us.

RECORD OF INDIVIDUAL EXAMINATION

MR. ROSS.—*Form 1* is designed as a record of individual examinations. In the main the form explains itself, but it may be well to summarize, very briefly, the advantages which it offers.

1. It provides a working schedule and prescribes the order in which the observations of inspectors shall be made.
2. It provides for economy in clerical labor through the use of check marks and of standard symbols in recording.
3. It brings together on a single slip, four by six inches in size, the complete record of each series of observations on a given child.
4. It makes possible, by the use of carbon sheets, the preparation of several copies of the record at a single writing, so that a duplicate of the inspector's record can be furnished to the principal of the school and through him to the teacher, to the nurse, to the parent if desirable, and to the supervisor of medical inspection for purposes of control.

The copy of the record which goes to the supervisor's office is filed under the date of the original examination and this becomes a charge against the inspector, to be removed only when the defects noted have been corrected, when the child dies, or moves from the city, or when the

case is otherwise closed by authority of the supervising officer.

5. It provides the medical inspector with a convenient means of preparing his daily and monthly reports. By separating into appropriate piles the slips representing the work of a given period an inspector can, in a few minutes, obtain the figures to be entered on the forms for summary reports.

DAILY SERVICE RECORD OF MEDICAL INSPECTION

Form 2 is designed as a daily record of the service performed by each medical inspector. It provides for a detailed account of the location of the inspector and the distribution of his time for every hour of his working day. The record of examinations for physical defects, as entered upon this form, gives only the totals of new cases and of old (pending) cases examined. The details concerning medical examinations are provided for on Form 3, the totals of which for a given period must agree with the totals for the same period on Form 2. The record of examinations, exclusions, and readmissions of contagious disease cases is provided for in detail on Form 2; the daily totals for individual schools being entered upon Form 3.

MONTHLY BALANCE SHEET

Form 3 is designed as a monthly record of each inspector's service in individual schools; a separate report being rendered for each school. On this form is entered, day by day, a summary of the contagious disease cases excluded, readmitted, and dropped. The number of cases readmitted and dropped, subtracted from the total number excluded, gives the number pending at a

BUREAU OF HEALTH, PROVIDENCE, OREGON
DIVISION OF SCHOOL HEALTH SUPERVISION

SUPERVISOR, MEDICAL INSPECTION DISTRICT NO. _____
 THE FOLLOWING IS A STATEMENT OF SERVICE I HAVE PERFORMED IN SCHOOL NO. _____ FOR THE MONTH OF _____ (1) _____ (2) _____ (3) _____ (4) _____ (5) _____ (6) _____ (7) _____ (8) _____ (9) _____ (10) _____ (11) _____ (12) _____

MEDICAL INSPECTOR

DAY OF MONTH	NUMBER OF PUPILS EXAMINED FOR				NUMBER OF DEFECTS FOUND										NUMBER OF DEFECTS CORRECTED										TOTAL OF DEFECTS CORRECTED	
	EXCLUDED	DISMISSED	RECEIVED	RECEIVED	EYES	TEETH	TONSILS	ADENOIDS	OTITIS	HEARING	DEAFNESS	HEART	SKIN	OTHER DEFECTS	EYES	TEETH	TONSILS	ADENOIDS	OTITIS	HEARING	DEAFNESS	HEART	SKIN	OTHER DEFECTS		
1																										
2																										
3																										
4																										
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29																										
30																										
31																										
TOTAL																										

SCHOOL SERVICE RECORD, INDIVIDUAL SCHOOL FORM 2

A similar account is provided for the various kinds of defects discovered and corrected, so that the number of defects, as well as the number of defective children, charged to each medical inspector constantly appears on the record as an index of the efficiency with which inspectors and nurses are following up their cases and securing the coöperation of pupils, parents, teachers, and family physicians.

DEPARTMENT OF PUBLIC HEALTH AND CHARITIES— PHILADELPHIA							
BUREAU OF HEALTH—DIVISION OF SCHOOL MEDICAL INSPECTION RECORD OF CLASSROOM INSPECTIONS							
GRADE.....			CLASSROOM.....				
SCHOOL.....			MEDICAL INSPECTOR.....				
NAME OF PUPIL	DISEASE OR DEFECT	DATE DISCOVERED	DATE OF INSPECTION AND ACTION TAKEN				

FORM 4.—MEMORANDUM OF CLASS ROOM INSPECTIONS.

MEMORANDUM RECORD OF CLASS-ROOM INSPECTIONS

Form 4. This record contemplates a periodic inspection (weekly or bi-weekly), in the class-room, of every pupil by a medical inspector or nurse. The object of this inspection is the prompt detection of contagious diseases and the discovery of pupils in need of special examination for physical defects. One of these cards for each class-room is maintained by the inspector who, at each successive visit, enters a record of new cases discovered and the status of each of the pending cases until the case is finally disposed of. A summary of these class-room inspections is entered in the inspector's daily report (Form 2), and this finds its way into the monthly and annual statement of service rendered and results accomplished.

MR. MARTIN.—Isn't there a good deal more red tape about this system of records than is necessary; and will not the results be that medical inspectors will spend valuable time in compiling records that will never be used, rather than in discovering physical defects of children and in getting them corrected?

MR. ROSS.—The clerical work involved in the preparation of the summary reports will not require more than twenty minutes a day of each inspector, so that the amount of "red tape" will not be a serious burden. Even if much more time were required, however, it would be well spent if it enabled supervisors and inspectors to have constantly before them a clearly defined picture of service and results.

MISS PARSONS.—If it were silver coins, rather than live children, that were being entrusted to the care of

inspectors, no system of records and reports necessary to insure carefulness and fidelity on the part of custodians would be regarded as useless red tape. Exact accounting and business-like methods are quite as essential to the proper supervision of medical inspection as to the management of financial affairs.

MR. YOUNG.—I notice that, while your system makes admirable provision for a record of individual examinations and for daily and monthly reports, it apparently does not provide for annual summaries, or for a continuous cumulative history of the physical development of each child.

MR. ROSS.—The system contemplates both of these provisions. The annual summaries will be obtained by bringing together the facts for each school, for each medical inspector, and for each supervisory district, and for the city as a whole into compact tabular form. The physical histories of individual children are to be permanently recorded upon cards similar in most respects to Form 1; the main facts regarding defects found and corrected being entered chronologically opposite the proper dates.

MR. YOUNG.—Are the record forms that you have discussed all that are necessary for carrying on the business of medical inspection?

MR. ROSS.—They constitute the vital part of the record system, unless we include sanitary inspection in the same system. It seems expedient in our case to have physicians inspect the schools as well as the children, and you will notice that provision was made in the daily service record for an account of time employed in sanitary inspection. We have prepared, in addition, a form for systematizing the records of such inspection.

Form 5

OBSERVATIONS OF INSPECTOR: #		Condition Satisfactory: - Unsatisfactory: + Improved: - Not Improved: O. No Action	
DATE			
BY WHOM (INITIALS)			
NUMBER OF CLAS			
NUMBER OF STUDENTS			
NUMBER OF WALLS			
IMPROPERLY HEATED			
NUMBER OF ROOMS			
WELL VENTILATED			
MAXIMUM HUMIDITY			
MINIMUM HUMIDITY			
MAXIMUM TEMPERATURE			
MINIMUM TEMPERATURE			
NUMBER OF CLASS ROOMS			
BUILDING CLEAN			
SANITARY CLEANING			
TOILET FURNISHING			
IN GOOD ORDER			
TOILET ROOMS			
FRONT WELL			
DISINFECTANTS USED			
SANITARY CELLAR			
CLASS ROOMS			
HALLWAYS AND			
CLOAK ROOMS			
CELLAR			
PLAY GROUND			
ADJOINING ALLEYS			
UTENSILS FOR DRINKING			
WELL OR CISTERN			
FILTERED (CITY)			
FILTERED (SCHOOL)			
SCHOOL FILTERS CLEAN			
FIRE ESCAPE IN GOOD CONDITION			
AND UNOCCUPIED			
OTHER OR -			
ELEVATORS			
GENERAL SANITARY CONDITION			
WATER SUPPLY			
FIRE ESCAPE			

RECORD OF INSPECTION OF SCHOOL PLANT

Form 5 provides for both a current and a permanent record of facts concerning the seating, lighting, temperature, and sanitation of each class room, and the general sanitary condition of coat rooms, toilets, water supply, and the premises generally. The form also calls for a record of recommendations for the correction of sanitary defects, and the action taken by the appropriate authorities; thus locating responsibility for any unsanitary condition that is permitted to continue.

Now, to answer Mr. Young's question whether these forms are all that are necessary for carrying on the business of medical inspection—they are not all that are required for carrying on the entire business, of course, but are the heart of it. Various supplementary devices are needed to facilitate the work of medical inspectors and economize their time. Printing is far cheaper than writing and more easily standardized. For this reason it is desirable to furnish carefully worded forms for use in notifying parents of the exclusion of children for contagious disease; for giving instructions concerning the treatment of minor affections; and for urging the regulation of children's diet, hours of sleep and personal hygiene. A well-organized medical inspection service will also do well to issue periodical bulletins, as is now being done in several cities and states where parents and pupils are informed, one point at a time, concerning matters of vital and timely interest. By the effective use of appropriate pictures, charts, and other illustrative matter, such bulletins can enlist practically every parent in the community, to some extent, in a program of constructive child hygiene. By utilizing the enormous power of

newspaper publicity, still wider effect can be given to "health-grams" and to a community program of health conservation.

MRS. ROSS.—I will frankly confess that this evening's discussion has given me a new sense of the value of forms of recording the observations and service of medical inspectors. It is evident that those who apply the term "red tape" to a well-considered plan for collecting, classifying, and summarizing these facts simply advertise their own ignorance of the basis upon which all efficient management must rest.

MR. YOUNG.—Certainly without the constant application of fact-tests the best laid plans may come to naught. By the intelligent use of such tests, good intentions may be transformed into substantial results and praiseworthy enthusiasm into scientific certainty.

SUGGESTED READING

ALLEN. *Efficient Democracy*. Chapters V-VII.

GULICK AND AYERS. *Medical Inspection of Schools*.
Appendix II. (In editions previous to 1913.)

SNEDDEN AND ALLEN. *School Reports and School Efficiency*.

XI

HEALTH BEGINS AT HOME

MR. YOUNG.—Alert school physicians, perfect school sanitation, the wisest curriculum that can be devised—these agencies seem to herald a day of new vigor and joy to our children. But they are not enough. Our children still spend more than half their time at home. Bad conditions there can counteract to a large degree the best efforts of an enlightened public school system.

When we heard the startling figures in the report on the Washington school the fact did not escape us that, if the school was harboring 87 unsound children in every 100, the homes were doing the same thing, and possibly even creating defects just as the school has been doing.

Our recent work with parents in securing medical treatment for their children has incidentally convinced us that the homes are indeed responsible for many of the children's defects. Mrs. Ross will report to us on the observations made by the nurses.*

MRS. ROSS.—In locating home responsibility for the defective children we had to find out two very essential things—what homes showed most defective children, and how such homes differed from the others. Our nurses accordingly, after they had finished their special work of securing medical treatment for the defective

* Based upon an examination of home conditions of New York school children by the New York Committee on Physical Welfare of School Children, 1907.

children, made visits to all the remaining homes of the Washington school children.

The children of this school come from a great variety of homes, representing all grades of prosperity and intelligence, and we supposed that these various grades would be clearly reflected in the various health conditions of the children. Our surprise was great, therefore, when we found but little difference in the physical condition of the children whether they came from homes of opportunity or of neglect.

Adenoids and anemia were almost as frequent on the boulevard as in the alley. Even malnutrition was common in the prosperous homes, the ill effect of wrong feeding or overfeeding in these homes equalling in many cases the ill effects of underfeeding in the poor ones. In the better homes, it is true, there was more evidence of money outlay for the children's health. The doctor was constantly being consulted for this and that, but, in spite of this advantage, the proportion of thoroughly healthy children in the better homes was only slightly greater than in the poorer homes. In fact, we found but few children really sound and well in any of the homes of rich or poor, and we were almost led to believe that childhood is a disease and that the normal condition of children is to be forever passing from one ailment to another. One mother, indeed, seemed to regard this as the case when she said placidly, "Yes, the babies have been sick most of the winter, but one can't expect little children to be well much of the time."

This woman was bringing her wealth, her college education, her time, and her devotion to bear on the rearing of her children; but she was not keeping them well, and so supposed they couldn't be kept well. On inquiry she admitted that she had never made a study

of the hygiene of childhood. This admission furnished the key to her children's ill health, which was not due to any inherent weakness of childhood. In fact, these children had unusually strong constitutions, being endowed with a rare physical heritage. What they needed was a hygienic régime which their mother did not know how to provide.

This case is not the exception; it is thoroughly typical of the households that came under our survey. Our inquiry, which we made at every house, as to whether any systematic study of child hygiene beyond the infant stage was being or had been carried on, usually caused bewilderment, and in only one instance met an affirmative response.

In several homes, it is true, we found that the health of children was recognized as a problem, and some thought was given to it, but this subject of inquiry ranked distinctly lower than the absorbing question of the style of clothes most becoming to their young persons. One column of health hints to 20 pages of fashion hints per month seemed a satisfactory arrangement to most of the mothers who showed any interest at all in studying the health of their children.

In one exceptional case we found the mother making a thorough study of child hygiene. She declared that bringing up healthy children was a fine art—a complicated art which must be faithfully studied to be mastered. She was taking a magazine devoted to the subject of health, and reading in addition whatever she could find that bore on the healthful upbringing of her three young sons. The diet, the air, the dress, the sleep, the exercise, the work, and the play for these young boys were provided according to the best standards to be found, with results that any mother would

envy. These boys would have carried off the blue ribbon had their parents been accorded the same opportunity for exhibiting their productions as we delight to give those talented individuals who raise excellent chickens and pigs.

MR. MARTIN.—Your irony cuts home, Mrs. Ross. My own children would carry off few prizes. I have not been so fortunate in finding ready aids for bringing up healthy children as this mother of sons has been.

From time to time I have called on the experience of my friends who have succeeded in keeping a fair proportion of their children alive, and they have generously told me all they knew; but what did they know? One knew that a draft of air in pneumonia was fatal; another that the patient could only be saved by putting him on the roof. One knew that little children must have plenty of meat to insure good teeth; another knew that meat, even in small quantities, was a poison. One knew that water at meals ruins children's digestion; another knew that children couldn't drink too much water at any time. One knew that flannels should be worn the year round; another knew they were never needed. I have tried to avail myself of all these instructions, but, in spite of that, my children aren't very well, and I confess I don't know how to make them so.

MRS. ROSS.—Mr. Martin's experience illustrates exactly the conclusion that our committee was forced to draw, which was that few parents understand the physical care of children, and that almost none realizes that child hygiene is a scientific art which it is a duty to practice. It is not poverty, overcrowding, or insufficient food that is mainly keeping the mass of children in low health. It is ignorance. I could multiply instances of appalling mistakes we found not only in ignorant homes,

but in those of supposedly highest intelligence and culture.

We found, for instance, the gifted child of a brilliant statesman suffering from malnutrition. The child was on a double diet which the parents, under doctors' orders, were forcing on him in the hope of increasing his scanty number of pounds. The solicitous parents did not observe that the child was scarcely chewing his food but bolting it down in quantities at top speed; and so it never occurred to them that the excessive food in its unmasticated state was continuing to cause the very condition it aimed to correct. It is probable that the little boy's health would be completely made over if he merely acquired the habit of chewing his food well.

Another family we found mourning the death of an only daughter. The little girl, whose adenoids had been neglected, had just died from pneumonia caused by ether irritation during an operation for appendicitis. The doctors were convinced that this rare complication would not have occurred if the respiratory membranes had been kept clear and sound.

In another family we found a little boy on the verge of a nervous breakdown. The father was urging him with promised rewards to make further efforts in school. When a friend invited the child to her seashore home to spend a few days of rest and play the father would not consent because the visit would interrupt the all-important school work. Just a little further strain is likely to put a permanent end to this child's school work.

In another home we found a baby dying of enteritis because its grandmother thought that this modern talk about the necessity of sterilizing all the bottles and nipples was nonsense.

Shall I continue my woeful story, or have I made it clear that, as a rule, our homes are not caring for children according to established hygienic principles, and that the health of our children would profit infinitely if they were?

MR. MARTIN.—You have made your point very clear, Mrs. Ross. It is in thorough accord with my own experience. To be sure, my acquaintances all have hygienic principles, but they are not established ones; many of them are mutually exclusive. So far as I know, the raising of children has not been standardized, as the raising of hogs, calves, or chickens has been. The conditions necessary for the health of chickens, for instance, are thoroughly understood, and can readily be found in any chicken magazine or special government bulletin.

My fourteen-year-old boy, who is starting a fortune on hens in the back yard, has a great advantage over me, who am trying to raise him. The boy can read enough in one afternoon to insure his winning all the prizes at the county fair—provided he carries out instructions. But I, who am raising children, what guide have I to compare with these valuable instructions on chickens? If I could come upon a few principles that didn't contradict one another, that had a scientific foundation, and that were warranted to stand wear, I would exchange my whole library for them.

DR. LATTA.—The case is not so desperate as that, Mr. Martin, though the government would certainly increase its claim to our respect by elevating the art of child-raising to the level of chicken or corn-raising and putting the best method of child culture within the reach of every American parent. Indeed, the country has already begun to advance in this matter. It is going out of fash-

ion for a state to appropriate \$150,000 for the protection of the health of its people and \$750,000 for the protection of its fish, forests, and game, as the Empire State did a few years ago. We have strong reason to believe that the new national Children's Bureau is opening a new era for the health of the nation's children. The Bureau has already attacked the evil which presses most bitterly on the homes of our country, the needless death of hundreds of thousands of babies and little children each year.

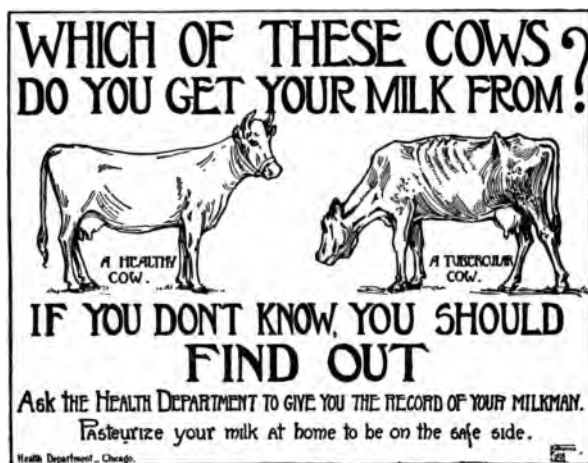
While, as Mr. Martin says, the government has until recently neglected the matter of children's health, the medical profession has not. Sound standards for bringing up healthy children have actually been established, and these have the great virtue of being simple and easily mastered.

MR. MARTIN.—Then why aren't they known? Why don't the doctors instruct us? Why do they studiously envelop their services in a shroud of mystery? Why is it a breach of etiquette to inquire what drug is about to go into your child's stomach, and another breach, when you see the new doctor entirely reversing the last one's treatment, to ask whether the old doctor was killing your child? Why does the physician say in effect, when he comes into your house, "This is my case. 'That is all ye know on earth and all ye need to know.'"?

DR. LATTA.—That old-fashioned medicine-man trickery has nothing to defend it, sir, except that the public encourages it. I am glad to hear a protest made against it. If the people would insist on being treated as intelligent beings by physicians, and insist as well on a display of intelligence by their physicians, the cause of health would be enormously advanced. If you would help this on, encourage the doctors and the medical

schools that do not regard the duty to a family done when a temperature has been taken and a dose prescribed.

MR. MARTIN.—Just how is one to encourage such doctors? The advice of a physician is expensive. Most families feel that they cannot afford it unless the case is urgent. Few people can manage to call in a costly private advisor for all the questions that arise in the care of children. Is there no simple way of arriving at the established principles of hygiene for which we are all groping?



AN APPEAL THAT LEAVES FEW PARENTS UNINSTRUCTED OR INDIFFERENT.

DR. LATTA.—There surely is. Well-selected reading should put the main principles of hygiene within the reach of any fairly intelligent person. It is important to have such reading directed under competent advice, however, as much of the health literature that appears

in newspapers and periodicals has little value, being ill related, unscientific, and even contradictory. Public health officers should give advice in such matters, as well as instruction to the people in simple hygienic principles. Ex-Health Commissioner Evans of Chicago, when he began to publish his weekly "Health-grams," set a great example to the entire country in practical methods of teaching the people to understand such important matters as the care of young babies, the handling of contagious diseases, the danger of flies, the value of fresh air, clean milk, and pure food. The state *Health Almanacs* recently published in Virginia and Kansas are also notable examples of forceful and far-reaching public instruction. The observance of *Health-day* in a number of states has also proved to be a powerful means of directing the attention of entire communities to the study of health.

A method which has proved very successful in impressing great numbers of people is based on the Missouri idea of actual demonstration. The various welfare shows held in several cities recently, the Child Welfare Exhibits in New York and Chicago in 1911, the Milk Show in Philadelphia in the same year, and the remarkable Philadelphia Baby-saving Show in 1912, have reached hundreds of thousands of people eager to learn the best standards for rearing their children.

MISS PARSONS.—Another very effective agency for demonstrating health principles to parents is the hygienic school lunch, an institution now successfully established in over 40 of our cities. The interest which the schools show in the matter of feeding children, and the benefit which the children derive from the lunches, impress parents profoundly with the importance of a

properly selected diet. The most progressive schools are taking advantage of this aroused interest to give parents direct instruction in the subject. We must not lose sight also of the immensely valuable health instruction that can be given to parents by teacher nurses under school direction. The intimate and continuous touch of these nurses with home life in their districts makes their services among the most important factors in advancing a knowledge of hygiene among parents.

DR. LATTÀ.—In addition to such public work as we have cited, there should be constant instruction carried on by private practitioners. I myself am about to conduct some classes in hygiene among my patients. I cannot afford the time nor they the money for individual instruction; but in these classes of twenty-five or thirty members we can cover the necessary ground with one twenty-fifth or one-thirtieth the time and money outlay that individual teaching would require.

MR. YOUNG.—Dr. Latta in his last utterance has rather anticipated a proposal I was about to make. Two things this evening have been made very evident: first, that parents, as a rule, are helplessly ignorant regarding the requirements for their children's physical welfare; second, that it is the duty of physicians to help dissipate this ignorance. I was accordingly about to request Dr. Latta to give us a series of talks in which he should outline a general health program. Since he is already arranging to hold classes in hygiene among his patients, may I suggest that he include the members of this club in his plan?

DR. LATTÀ.—I welcome Mr. Young's suggestion, as I do every opportunity for extending health instruction, for it is only through the education of the laity in matters of hygiene, and to a certain extent in actual medical



BABY SAVING SHOW—PHILADELPHIA, MAY, 1912.

This exhibit set a new standard for effective instruction in child hygiene. The attendance was more than 100,000. The most important parts of the exhibit were preserved and sent from place to place throughout the city after the main show closed. Such graphic methods will be utilized more and more in public instruction as their value comes to be recognized. The lower photograph is a nearer view of the booth shown in the left foreground of the upper picture.



matters, that we can hope to make much progress toward our goal of universal health.

It is not the doctors but those who have the daily care of the children who really determine their health. The mother who does not know the few fundamental laws of health, or who, knowing them, fails to observe them, has little reason to hope that she will bring up all her children or have those who are spared grow up thoroughly healthy. On the other hand, a mother who does know the simple laws of health and follows them in caring for her children may be reasonably free from the haunting terror of death and disease. Health laws are easy to understand; as easy as the ten commandments.

MR. YOUNG.—And fully as hard to keep.

DR. LATTA.—Hard sometimes, but not so hard as to suffer the consequences of health laws broken, which are: sickness, sorrow, and loss. Too many parents have gained in grief the knowledge that arrived too late. The day has come, however, for an end to these grievously learned lessons. Parents are demanding to know how to keep their children well, and men of science are telling them how.

MISS PARSONS.—Are there not many conditions affecting the health of children which are out of the direct control of parents, such as smoke and dust in cities, bad school air, and adulterated foods?

DR. LATTA.—There surely are, and such evils can be attacked only by organized public effort, which it is the duty of all parents and public-spirited citizens to assist. Some of these desirable changes can unfortunately come only slowly, but, while parents are struggling with them, they can do much to offset the harmful effect of unsanitary public conditions by making home conditions as

wholesome as possible, thus keeping the resisting powers of their children at a maximum.

The health of children who have inherited a fairly sound physique depends upon two main factors: their environment, and their own habits. Parents of naturally healthy children who provide them with the right environment and help them to establish wholesome habits are bestowing upon them a peerless heritage of power and happiness. The necessary elements in the environment are few, but most important: shelter, air, food, clothing, and play space in the physical environment; joy, affection, and hope in the social environment. To provide these vital requirements for children in the right amount and kind is to go far toward securing for them robust health. The necessary habits are simple: to keep the body clean, to eliminate waste regularly and completely, to masticate food thoroughly, to aspire, work, love, play, exercise, and rest in the proper degrees. Such a régime carried on in wholesome surroundings is the guarantee of a healthy, vigorous life.

The details to be considered in carrying out this health program will form the basis of our discussions in the talks which Mr. Young has asked me to give.

SUGGESTED READING

BUREAU OF MUNICIPAL RESEARCH, PHILADELPHIA.

Report of the Philadelphia Milk Show.

Report of the Philadelphia Baby-saving Show.

CHILD HYGIENE ASSOCIATION, PHILADELPHIA.

Report of Philadelphia Baby-saving Show.

DENISON. *Helping School Children*, Chapters VI-IX.

GRICE. *Home and School*.

SALEEBY. *Parenthood and Race Culture*.

STATE HEALTH ALMANACS OF VIRGINIA AND KANSAS.

XII

AIR

DR. LATTI.—One of the first and most pressing needs of all creatures is shelter, an arrangement which civilized man has unfortunately carried to great excess. Devised in the first place to protect against the destructive elements, storm and burning sun, it has come to be throughout the temperate zone a barrier to the life-giving sunlight and air. The problem of shelter is not how we can be sufficiently protected by it, but rather how we can keep from being destroyed by it. Substantial answers to this question have been found in the now popular sleeping porches and window tents, open-air schools, and boys' and girls' camps, all of which are devices for securing the most urgent of all human needs, *fresh air*. A man can make shift to live a little while without either shelter, clothes, or food. Not so if his air supply is withheld. In that case he promptly dies. Nature has provided liberally for this most pressing and constant of all the vital necessities, making fresh air more abundant than any other life-giving element.

This very abundance of air in nature has unfortunately led man to think lightly of its value. In the days of Queen Elizabeth, when building fine houses became the rage, Englishmen shut out the wholesome airy drafts from their houses and then began to die of tuberculosis, as they have been doing ever since. To this day

the matter of proper house ventilation lags far behind the other provisions of sanitation. Bad sewage, for example, in Chicago, a city of 2,250,000, is estimated to be causing less than 400 deaths a year, while the annual army of victims from bad ventilation numbers 10,000. In the words of ex-Health Commissioner Evans, "Man consumes solid food, liquid food—water, and gaseous food—air. Ten thousand deaths a year from bad meat, or bad milk, or bad water would produce a world-wide scandal, yet we accept ten thousand deaths a year from bad air with complacency."

MR. ROSS.—How are those figures arrived at? I have never happened to see in a mortality list a death reported as caused by bad air.

DR. LATTA.—Foul air deaths are never so reported, yet there they stand, bulking about 40 per cent. in every death column. The immediate causes of these deaths are given as tuberculosis, pneumonia, grippe, bronchitis, spinal meningitis, scarlet fever, every one of them airborne diseases. The numbers that die from these diseases are appalling. Do you know that 50 per cent. of all who die in this country between the hopeful ages of 20 and 30 years die of tuberculosis, and that pneumonia now claims almost as many victims annually as tuberculosis, the total roll from each disease being not far from 160,000?

MISS PARSONS.—I suppose the number of deaths from these diseases, large as it is, indicates but a small proportion of the entire number of bad air victims. There must be many more who recover from these diseases and who pay bitterly in suffering and financial loss, as do their friends.

DR. LATTA.—Obviously. For every death from tuberculosis it is estimated that there are not less than five

living cases, some of them hopelessly doomed, others destined to make a long, agonizing struggle back to health. The number of people in the United States suffering from tuberculosis is probably over 1,000,000. Half of these are able to earn about half their wages; the rest are totally incapacitated. The cost of these cases in loss of wages, cost of treatment, and capitalization of the earnings cut off by death is annually \$1,235,000,000. Much of this loss is suffered by the families which are left destitute.

MR. ROSS.—I am still puzzled to know why you call the diseases you have mentioned foul air diseases. Are they not all caused by bacteria? What has bad air to do with them?

DR. LATTA.—A great deal, sir. The bacteria that cause the diseases I named, all of which begin in the respiratory organs, can be carried by dust in the air. What we call bad air—indoor air that is not constantly changed—is invariably full of harmful bacteria.

MR. ROSS.—What is to prevent these same bacteria from inhabiting the outer air?

DR. LATTA.—The sunshine. The sun is the greatest natural germicide. Tuberculosis and a host of other germs cannot survive an application of sunlight.

MR. ROSS.—Then do I understand that the single great menace of indoor air is its large number of bacteria?

DR. LATTA.—That, along with indoor dust which carries bacteria, is certainly the most dangerous element in house air, but it is only one of several others, such as undesirable temperature and humidity, organic poisons, poisonous gases, and insufficient oxygen. All these unfavorable elements lower natural human resistance to

disease. Thus, as you see, unchanged indoor air is doubly dangerous because it is not only loaded with germs, but prevents people from resisting them. Children, whose natural power of resisting disease is much lower than that of adults, are never really healthy unless their lives are spent mostly in the open air.

MRS. ROSS.—Do you mean that literally, Dr. Latta? Few children can manage to spend most of their time in the open air.

DR. LATTA.—And few children, as we have been finding out, manage to be really healthy. Parents are beginning to suspect the connection between fresh air and healthy children, and they are asking how they can give their children the necessary fresh air while they are providing them with such fruits of civilization as the ordinary school house and the steam-heated flat. They can't do it. Parents who want to see their children red-blooded must either keep them out of the ordinary school house and city flat, or reform the arrangements for ventilating such places.

MR. MARTIN.—I am struck by your sweeping demand for children's outdoor life. How can we give it to them without making Indians of them?

DR. LATTA.—It can be given to them without interfering with any of the cultural processes which the civilized parent so strenuously applies to his young. By day the semi-outdoor school, which is the school of the future, will answer the needs of healthy education; by night the sleeping porch or window tent will provide fresh air without sacrificing any of the refinements of home.

MR. ROSS.—Now, before we get the outdoor life completely adopted, let me ask whether it doesn't savor somewhat of a fad. I can't forget the robust men and

women who grew up when it was the fashion to shut tightly all the bedroom windows to keep out the dangerous night air. What evidence is there that indoor air actually induces disease and lowers resistance, and that outdoor air does the opposite? Can you quote us the figures?

DR. LATTA.—Plenty of them, Mr. Ross. As far back as the civil war it was found that the unhoused hospital cases showed greater resistance to typhoid, erysipelas, and sepsis than cases of the same diseases in well-appointed hospitals, where the percentage of deaths was decidedly higher. The introduction of effective ventilation in children's hospitals has reduced the death rate from 50 to 5 per cent.; in surgical wards of general hospitals from 44 to 13 per cent.; in army hospitals from 23 to 6 per cent. The annual death rate among horses in the German military service has been brought down by more roomy quarters and free ventilation from 19 to 1.5 per cent.; and in Boston, during a certain epidemic, the number of horses lost in badly ventilated stables was 5 to 1 in those well ventilated. Fresh air renders recovery from disease not only more sure, but more swift. At the S. R. Smith Infirmary on Staten Island a comparison made in two wards of the same nature, containing the same class of patients, showed the average time of recovery in the non-ventilated wards to be 16 days, in the ventilated wards 10 days.

MR. MARTIN.—You have left us with no doubt of the desirability of fresh air for our children. How to secure it is the next question.

DR. LATTA.—It is well to keep two simple rules in mind:

1. Keep the children out of doors as much as possible day and night.

2. Make whatever indoor air children must breathe as much like outdoor air as possible.

Many people think they are strictly observing the first rule when they are giving their babies and children an outdoor "airing" of an hour or two a day. This is



OUT-DOOR SLEEPING SIMPLIFIED.

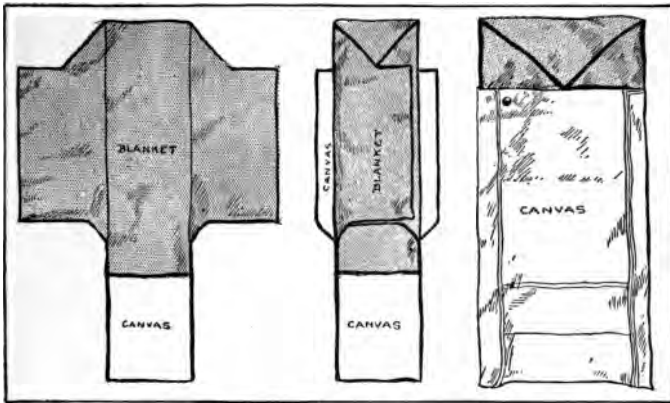
A small tent, hung like an awning inside the window, leaves the sleeper's head in the open air, at the same time preventing the room from being cooled off.

good as far as it goes, but it goes no further toward answering the whole need of fresh air than one glass of good milk a day answers a child's entire requirements for food. The easiest and most effective way to give children outdoor air is to have them sleep in it. This arrangement alone allows them to spend almost half of their time in the open air.

MRS. ROSS.—Do you think it safe for children to use sleeping porches the year round? A friend of mine

gave up the plan because her children caught so many colds.

DR. LATTA.—It is probable that your friend did not realize the importance of protecting her children's heads and feet from exposure. It is perfectly safe for children to sleep outdoors all the year if they are sufficiently protected. In severe weather, if the extra precaution is taken to cover heads and necks with woolen hoods coming well over the forehead and fastening around the neck, and to keep the feet warm with woolen socks and soapstones, the north wind brings nothing but health and vigor in its blast.



OPEN AIR COMFORT.

This bag, designed by Dr. Carrington for use in out-door sleeping or sitting, is inexpensive and easily made at home. The first drawing shows the bag spread out to air; the second shows the blanket folded to form the bag; the third (on larger scale) shows the canvas flaps at the bottom and sides drawn into place and buttoned or buckled.

MISS PARSONS.—I can testify to the wholesomeness and pleasure of the sleeping porch. For a year I have slept on the roof of our settlement house. During that

time I have felt more vigorous than ever before in my life, and have not contracted one cold. The neighborhood has taken up the idea, and many of the roofs are now dotted with little shelters where babies are becoming rosy and young men strong. Our tenement laws, it would seem, will soon have to provide for some form of sleeping porch or roof, as that is the one easy means of securing an abundance of air for the people in the congested districts.

DR. LATTA.—That is an excellent suggestion. No step could be taken that would go further toward securing good health for the people.

Now, before we leave the subject of open air arrangement it will be well to give a warning or two. There should not be too much direct exposure to the cold air. Sleeping porches should always have fairly warm dressing rooms accessible to them, and children's play spaces in winter should be sunny and shielded from the winter wind. A cold wind, and especially a damp one, by chilling little children beyond their power of resistance, sets up catarrhal trouble.

MR. MARTIN.—Our children must still spend a few hours in the house. How are we to make the house air as much like outdoor air as possible?

DR. LATTA.—Even under present imperfect housing conditions this can be done far more successfully than is usually the case. It is necessary, first of all, to provide for a constant entrance of outdoor air that is free from dust and a constant escape of indoor air by various means, such as open windows, doors, air flues, and open fire places. A house that is heated by a hot-air furnace has always a fair amount of fresh air circulating through it; so has a house with open fires, which fortunately cause a stream of fresh air to be forced in

through the cracks, even when windows have been faithfully shut against the cold.

An excellent device for securing a well-distributed volume of fresh, warm air in a room having a heat flue opening on the floor is a revolving air deflector set on the register. The deflector is revolved by the stream of warm air which it fans across the floor in every direction.

The problem of securing a circulation of air becomes pressing in the houses that boast of the popular steam or hot-water heating systems. Such houses rarely have separate ventilating systems, and are at a great disadvantage compared with those that employ the old-fashioned hot-air heating, which ventilates while it heats the house.

In these houses and flats housekeepers must double their care to secure outdoor air. Windows should be left constantly open top and bottom with window boards to prevent direct drafts in every occupied room. Raising the window from the bottom is not enough, unless there is a strong cross draft to an opposite window or room. Lowering the window from above is necessary to set up a current of air, the hot vitiated air escaping from the upper opening as the cool fresh air enters below. In very severe weather, when the draft from the open windows seems dangerous to health, occupied rooms should have a thorough blowing out with open windows and doors not less than once an hour.

MR. ROSS.—Is not your prescription of so much outdoor air in the house likely to run the coal bill up uncomfortably?

DR. LATTA.—Oh, yes, the bill is likely to run up a little, though most of our houses would be more comfortable if we kept them decidedly cooler by means of

fresh air. As for the fuel, do you realize that a fair charge for three doctor's visits and a prescription equals the price of a ton of coal? If you really want to reduce your living expense, save on the doctor by spending enough for right living to make his services unnecessary.

MR. MARTIN.—Is the problem of securing good air in the house solved when we allow for a good circulation of air such as you have described?



CLEAN CLEANING.

The hand-run vacuum cleaner, built like a carpet sweeper, which removes dust without scattering it, is fast supplanting the barbarous broom.

DR. LATTA.—Hardly. A circulation of fresh air is the first essential in house ventilation, but not the only one. Outdoor air on entering a house soon acquires the bad characteristics of indoor air, unless great care is taken to prevent this. Those baleful twins, bacteria and dust, are always in waiting to supply some infection, if no worse a one than the common house cold, which is, on the whole, the greatest bane of our winter months.

House dust is never free from bacteria, and should be avoided like the plague.

The amount of dust in the average house could be greatly reduced by a more sanitary method of furnishing and cleaning than is generally employed. Carpets, upholstered furniture, and heavy hangings should be shunned. Cushions and rugs should be cleaned outside, or with a vacuum cleaner. Floors should be smooth enough to clean with cloths instead of brooms. A really sanitary house can be made about as clean every day as the old-fashioned dust-gathering house was twice a year in the back-breaking "house-cleaning" season.

A few American housekeepers, remembering that use is beauty, beauty use, have already learned that a dwelling is not a museum for the storage of miscellaneous stuff, but a shelter for comfortable living. When all the housekeepers have acquired this idea and firmly cast half their house collections into the ash barrel, the cause of health as well as beauty will be wonderfully advanced.

The temperature of indoor air has also an important bearing on its wholesomeness. In addition to the direct danger to health from exposure when the indoor heat in winter is excessive, a temperature above 70 degrees interferes with the rising of the warm expired air, which instead hangs around the head to be breathed again and again. Air issues from the lungs at a temperature of about 90 degrees, and when the room temperature is 68 degrees or under it rises immediately above the breathing zone. House temperature should be kept between 60 degrees and 68 degrees, according to the activity of the occupants, those most actively employed finding the lowest temperatures most desirable.

Moisture, as we have previously learned, is another important element in wholesome indoor air. Care must

be taken to keep the relative humidity or moisture from becoming either too high or too low. A house should never be heavily shaded from the sun or set in a hollow, as these conditions foster dampness. The cellar should be kept as dry as possible by a constant circulation of air. When a house has been closed for a time it should be well dried by means of fires or warm sunshine.

When the weather is cold enough to require constant fires the danger of dampness gives way to the danger of too little moisture. To avoid this, steam should be added to the heated indoor air by one means or another, except when the outside air happens to be very damp. When a hot-air furnace heats the house, fresh steam should be introduced into the air chamber of the furnace or directly into the air of the house. When stoves are used for heating, pans or kettles of boiling water should always be kept on them. When steam radiators are employed it is often possible to let fresh steam into the air from the pipes. Hot water radiators do not admit of such an arrangement and their use makes it necessary to employ some special humidifying device if the relative humidity of the air is to be kept at a proper point. Numerous and satisfactory kinds of humidifying apparatus are now on the market, and it is no longer necessary for any home or school to inflict the deadening effect of "burned-up" air on its members.

The need of having an abundant supply of steam constantly injected into heated air to keep it at a satisfactory relative humidity was clearly shown by a test made a few years ago by Professor Loveland of the University of Nebraska. Taking two seven-room houses of exactly similar construction and heating equipment, he found that it required a daily amount of 64 gallons of water to raise the relative humidity of one house 10 per cent.

above that of the other—i. e., from 20 to 30 per cent. It was also shown that the ordinary furnace water pan exerted no measurable effect on the hygrometer whatever. This instrument for measuring moisture in the air is simple and fairly inexpensive. It is indispensable for the determination of anything but the vaguest knowledge regarding the amount of humidity in the atmosphere.

There remain three things to be guarded against in maintaining pure indoor air: organic and gaseous poisons, and deficient oxygen. Ordinarily a free circulation of outdoor air through the house by the use of open windows or hot-air flues is sufficient to give the necessary oxygen, and to keep the air fairly free from organic or gaseous poisons. Any undue source of air contamination must, of course, be strictly avoided, such as plumbing without vents or traps, decaying organic matter in house, cellar, or yard, and neglected garbage pails.

MR. YOUNG.—We are greatly indebted to Dr. Latta for his clear discussion of the meaning of fresh air. His words have doubtless left us all with the following emphatic ideas:

That good health in children is absolutely dependent on a constant supply of fresh air.

That children should have many hours in the open air every day and night.

That indoor air should be made as much like outdoor air as possible by the introduction of a constant stream of outer air into occupied rooms, and further by the keeping of these rooms *clean*, that is, free from dust, germs, and organic or gaseous poisons.

Am I right in emphasizing these three points, Dr. Latta?

DR. LATTAT.—They are exactly the points I wished

to make emphatic. When the children of our land actually come to breathe air provided in accordance with these principles, winter will cease to be the season of sickness, and colds will become as rare as smallpox.

SUGGESTED READING

AMERICAN SCHOOL HYGIENE ASSOCIATION. PROCEEDINGS OF THE SIXTH CONGRESS. *Report of the Committee on Heating and Ventilating.*

AYRES. *Open-air Schools.*

CARPENTER. *Heating and Ventilation of Buildings.*

CARRINGTON. *Fresh Air and How to Use It.*

SHAW. *School Hygiene*, Chapter IV.

XIII

FOOD

DR. LATTA.—When a young baby is not thriving its mother has one consuming purpose in life—to get the right food for it. She knows if she fails the baby will die. Children as they grow older and stronger don't always die when they have the wrong food. They suffer all sorts of ills, however, and fall a prey to many diseases whose real cause, improper food, quite escapes the mother's detection, unless she has learned the few fundamental principles which should govern the diet of children.

The vital effect that the right or wrong diet has on children has lately received striking demonstrations through experiments carried on in six schools by the Home and School League of Philadelphia.* In one of these schools warm lunches at a cost of 3 cents each were provided to 40 ill-nourished children for 3 months; each child during that time having on the average 55.3 lunches. The gain in physical strength, mental ability, and conduct of this group was compared with the gain of another similar group of 40 children in the same school; the latter taking no school lunches during the time of the test. The results of testing the two groups at the end of this period were as follows:

* Annual Report of the School Lunch Committee Home and School League, Philadelphia, 1911.

AVERAGE GAINS

	<i>Weight</i>	<i>Height</i>	<i>Hand strength</i>	<i>Lung capacity</i>
Children fed.....	1.78 lbs.	.90 in.	4.13 lbs.	11.96 cu. in.
Children not fed.....	.80 lbs.	.68 in.	3.19 lbs.	5.40 cu. in.
In favor of children fed.....	.98 lbs.	.22 in.	.94 lbs.	6.56 cu. in.

	LESSON AVERAGES			CONDUCT AVERAGES		
	<i>Before</i>	<i>After</i>	<i>Gain</i>	<i>Before</i>	<i>After</i>	<i>Gain</i>
The forty fed.....	64.0	70.1	9.5	69.4	72.0	3.7
The forty not fed.....	64.5	69.2	7.2	74.2	76.7	3.3
In favor of children fed..	2.3	0.4

The records, as you see, show that the children who were fed made greater gains than the other children in every item on which measurements were taken. If such results can be obtained by providing children with somewhat less than one substantial meal a day, what may not be expected from three such meals?

MR. ROSS.—Is not this little handful of 40 underfed children exceptional?

DR. LATTA.—By no means, sir. Picked up almost at random, they indicate the terrible proportion of underfed children to be found in all parts of our land of plenty. It has been estimated from careful investigations made in New York City that at least 1,248,000 children in this country are suffering from under-nourishment.

MR. ROSS.—The children of the poor, I suppose.

DR. LATTA.—No, the surprising thing about these shocking figures is that the hungry children are not confined by any means to the homes of the poor.

MR. ROSS.—Then why aren't they properly fed?

DR. LATTA.—Because parents almost universally choose their children's diet without any special reference to two essential requirements—the nourishing properties and the digestibility of foods.

The diet must be regulated in accordance with these



GOOD CHEER AND HEALTH AT THREE CENTS.

Four thousand school children in Philadelphia are being supplied with wholesome hot lunches at three cents each, under the combined auspices of the Board of Education and the Home and School League.

5

two main requirements: (1) food should be nourishing, i. e., it should contain the right amount and proportion of elements; (2) it should be digestible, i. e., it should promote the most perfect assimilation and elimination possible. With these two guides to set the right course in feeding, mothers can weather seas of difficulties.

I. NOURISHING FOODS

Nourishing food provides completely for two vital processes in children—growth and activity. An abundance of all the food elements must be supplied to provide the growing bones, nerves, blood, muscles, and other tissues with their needed materials. The surprising hunger of growing children is normal. They need more food to their weight than grown people do. Not only do they require much tissue-forming food, but, on account of their great natural activity, a large amount of strength-supplying food as well. If a child is languid or is said to have “outgrown his strength,” he is either suffering from some physical defect or from an improperly balanced diet.

MR. MARTIN.—What foods go to forming tissue and what to supplying strength, and in what amounts and proportions should they be provided?

DR. LATTA.—The body-building foods fall for the most part under one group—the proteids, or nitrogenous foods; the heat and energy-producing foods under two heads, called the carbohydrates and fats. The following is a classification of our common articles of food according to their body-building or strength-supplying properties. The table indicates when a food in one class contains elements in another.

CLASSIFICATION OF FOODS *

I. PROTEIDS—BODY BUILDING MATERIALS

1. Meats (fat)
2. Milk (fat and sugar)
3. Cheese (fat)
4. Eggs (fat)
5. Fish (fat)
6. Nuts (fat)
7. Beans and Peas (starch)

II. NON-NITROGENOUS GROUP—HEAT AND ENERGY MATERIAL

1. Carbohydrates

A. Starches

- (a) Cereals (protein)
- (b) Bread (protein)
- (c) Macaroni (protein)
- (d) Rice (protein)
- (e) Potatoes
- (f) Sweet Potatoes (sugar)
- (g) Fruits (sugar and mineral salts)
- (h) Green Vegetables (mineral salts)

B. Sugars

- (a) Various Sugars
- (b) Syrups
- (c) Honey
- (d) Sweet Fruits
- (e) Milk (protein and fat)

2. Fats

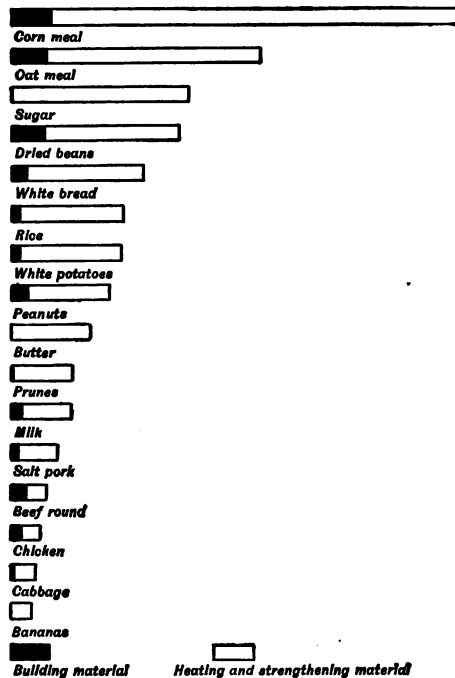
- (a) Meat Fat
- (b) Fish and Vegetable Oils
- (c) Cream
- (d) Butter
- (e) Milk (protein and sugar)

NOTE:—Mineral salts, which are also indispensable food elements, have not been put in a separate class in this table. As they are present in small quantities in all foods, it is unnecessary to note the fact in each case. They exist in the largest amount in fruit and green vegetables, which gives these foods a special value.

* Based in part upon a classification of foods in *The Health Index of Children*, by E. B. Hoag.

MRS. ROSS.—With the foods thus arranged in classes, in what proportions are we to draw on them to satisfy the needs of a growing child?

DR. LATTA.—In every 10 parts at least 8 should be selected from the energy-supplying foods, about 7 of these being taken from the carbohydrates (starches and sugars), and a little over 1 part from the fats. Slightly less than 2 parts of the entire diet should be selected from the proteids for tissue-building.



FOOD VALUES THAT CAN BE BOUGHT FOR TEN CENTS.

The amount of tissue-building material and of heat- and strength-giving material in ten cents worth of certain common food stuffs.

To make this more concrete, let us see what actual amounts of these various foods should be given to children between 8 and 12 years old. A child of such age should have in all not less than 4 pounds of food per day, 2 pounds of this being milk. Referring to our classified list of foods, we notice that milk appears 3 times. Its rich supply of the three main food elements gives it a prominent place in each class, and makes it the most nearly perfect single food for children. It provides over a third of the necessary protein and over a quarter of the necessary carbohydrates and fats.

In addition to the 2 pounds (quart) of milk, the diet of a child between 8 and 12 should contain about 28 ounces from the carbohydrate group, 1 or 2 ounces from the fat group, and about 3 ounces from the proteid group. The supply of proteids seems low in our table, but it must be remembered that considerable amounts of protein are contained in the carbohydrates which make up the rest of the diet. This simple diet table, together with a simple cost table, are sufficient guides in the choice of food elements for any busy mother who does not care to perplex herself with further intricacies connected with the chemical composition of food.

The following bills of fare for children from 2 to 12 years old show a wholesome diet, chosen with reference to the proper proportion of food elements as well as their digestibility. These meals have been planned to feed three children in a family with an \$800 income. Wholesome luxuries in the form of fresh fruits and vegetables, cream, olive oil, ripe olives, etc., can be added at increased expense.

MEALS FOR ONE DAY*
FOR THREE CHILDREN IN A FAMILY WITH AN EIGHT
HUNDRED DOLLAR INCOME

I.*Child 2-4 Years Old***BREAKFAST: 7.30 A.M.**

Oatmeal Mush	0.8 oz. Dry Cereal
Milk	1½ Cups
Stale Bread	1 Slice
Orange Juice	4 Tablespoons

LUNCH: 11 A.M.

Milk	1 Cup
Stale Bread	1 Slice
Butter	1 Teaspoon

DINNER: 1.00 P.M.

Baked Potato	1
Boiled Onions	
(Mashed)	
Bread and Butter	1 Slice
Milk to Drink	1 Cup
Baked Apple	1

SUPPER: 5.30 P.M.

Boiled Rice	1 Cup
Milk	¾ Cup
Bread and Butter	1 Slice

WEIGHT AND COST OF
FOOD FOR DAY

<i>Material</i>	<i>Weight</i> <i>oz.</i>	<i>Cost</i>
Rolled Oats.....	0.8	\$0.0030
Stale Bread.....	2.0	0.0080
Orange Juice.....	2.0	0.0150
Butter.....	0.5	0.0110
Potato.....	2.6	0.0020
Onion.....	1.0	0.0030
Apple.....	2.0	0.0100
Sugar.....	0.2	0.0006
Rice.....	1.0	0.0050
Milk.....	34.4 (1 qt.)	0.0800
	46.7	\$0.1377

SUBSTITUTES OR ADDITIONS

For rolled oats or rice: other cereals, such as rolled wheat, wheaten grits, farina, hominy, corn meal, shredded wheat and corn flakes.

For orange juice and baked apple: prune pulp or apple sauce.

For onions: spinach, strained peas, stewed celery, carrots, or cauliflower tips.

An egg may be added every day, and should be included at least two or three times a week.

These changes will alter the cost somewhat.

II.*Child 4-8 Years Old***BREAKFAST: 7.30 A.M.**

Oatmeal Mush	1½ oz. Dry Cereal
Top Milk	½ Glass
Stewed Prunes	4 or 5
Milk to Drink	1 Scanty Cup
Toast	1 Slice

DINNER: 1.00 P.M.

Pea Soup	1 Cup
Croutons	1 Slice Bread
Boiled Onions	2 Small
Baked Potatoes	1 Large
Molasses Cookies	2

SUPPER: 5.30 P.M.

Cream Toast	2 Slices Bread
Rice Pudding with	
Milk and Sugar	1 Cup
Milk to Drink	¾ Glass

WEIGHT AND COST OF
FOOD FOR DAY

<i>Material</i>	<i>Weight</i> <i>oz.</i>	<i>Cost</i>
Rolled Oats.....	1.3	\$0.0045
Prunes.....	1.3	0.0100
Milk.....	34.4	0.0800
Bread.....	3.0	0.0120
Peas—Split.....	4.0	0.0046
Onions.....	1.0	0.0120
Sugar.....	1.0	0.0046
Potato.....	5.0	0.0039
Cookies.....	1.0	0.0040
Rice.....	1.0	0.0050
Butter.....	0.5	0.0110
	53.5	\$0.1496

SUBSTITUTES OR ADDITIONS

For rolled oats: other cereals as suggested in opposite column.

For onions and peas: strained dried beans; other vegetables carefully cooked; fresh lettuce.

For prunes: fresh ripe apples, baked bananas, other mild fruits well cooked.

For rice pudding: junkets, custards, blanc mange, bread puddings and other very simple desserts.

For cookies: gingerbread or sponge cake.

*Planned by Mary Swartz Rose, Assistant Professor of Nutrition, School of Household Arts, Teachers College. *Teachers College Bulletin*, Second Series, No. 10.

III.

Child 8-12 Years Old

BREAKFAST

Oatmeal mush	or 1½ oz. dry cereal
Top milk	¾ Glass
Stewed Prunes	6 or 7
Toast	2 Slices
Milk to drink	¾ Glass

LUNCHEON

Pea soup	1 Cup
Boiled Onions	2 small
Baked Potato	1 Large
Bread and butter	2 Slices Bread
Molasses cookies	3 cookies

DINNER

Baked haddock	Small serving
Creamed hashed potato	¾ cup
Spinach	½ Cup
Bread and Butter	2 Slices
Rice pudding, milk and sugar	1 Cup

WEIGHT AND COST OF
FOOD FOR DAY

Material	Weight oz.	Cost
Rolled Oats.....	1.5	\$0.0060
Prunes.....	2.0	0.0150
Milk.....	34.4	0.0800
Bread.....	6.0	0.0246
Butter.....	1.0	0.0220
Peas—Split.....	1.0	0.0046
Onions.....	4.0	0.0120
Sugar.....	1.0	0.0036
Potatoes.....	8.0	0.0032
Cookies.....	1.5	0.0060
Rice.....	1.5	0.0075
Haddock.....	2.0	0.0015
Spinach.....	2.0	0.0015
	65.9	\$0.1875

IV.

*Suggested Dietary for Child Who Will
Not Drink Milk. Age 5 Years*

(1 quart of milk concealed in the menu.)

BREAKFAST: 7 A.M.

Oatmeal	¾ Cup Cereal
	Cooked in 1 Cup Milk
Creamy Egg on Toast	1 Egg Yolk with ½ Slice Bread and ¼ Cup Milk
Cocoa	1 Tsp. Cocoa and ¼ Cup Milk

LUNCHEON: 10 A.M.

Zwiebach and Cream	1 Piece Zwiebach and 1 Tbsp. Cream
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DINNER: 1.30 P.M.

Spinach Soup	4 oz.
Baked Potato with Cream	1 Potato and 2 Tbsp. Cream
Bread and Butter	1 Slice
Caramel Junket	1½ Cups

SUPPER: 5.30 P.M.

Rice and Prunes	2 Tbsp. Rice cooked in ½ Cup Milk and 5 Prunes
Zwiebach	1 Slice

WEIGHT AND COST OF
FOOD FOR DAY

Material	Weight oz.	Cost
Oatmeal.....	0.9	\$0.0030
Egg Yolk.....	0.5	0.0150
Cocoa.....	0.1	0.0025
Zwiebach.....	0.8	0.0145
Toast.....	0.7	0.0027
Spinach Soup.....	4.2	0.0162
Potato.....	4.0	0.0032
Rice.....	1.0	0.0050
Prunes.....	1.3	0.0100
Milk.....	34.2	0.0800
Sugar.....	0.4	0.0013
Butter.....	0.2	0.0036
	48.3	\$0.1570

SUBSTITUTES OR ADDITIONS

For rolled oats: other cereals thoroughly cooked.

For haddock: rare beefsteak, roast beef or mutton chops; other fish, especially white varieties.

For prunes: any mild ripe fruit uncooked or cooked.

For onions: string beans, stewed celery, beets, squash.

For peas or spinach: turnips or cauliflower.

2. DIGESTIBLE FOODS

We have learned what amounts and proportions of food elements go to make a nourishing diet for children. This is only half the problem of diet. To make sure that the diet which contains the right amount of nourishment is digestible is fully as important a matter. Children's stomachs are not so strong as those of grown people. That is why digestive upheavals constitute the most numerous afflictions of young children. These are due in almost every case to the ignorance or carelessness of mothers. If mothers would observe just two fundamental rules for selecting a digestible diet for their children, they would go far toward securing for them steady health and comfort. These rules are simple.

A. The diet should be made up of food easy to assimilate.

B. The diet should promote elimination of all waste matter by stimulating the bowels to thorough action.

A. *Foods Easily Assimilated.—Their Selection and Preparation.*—Foods that are easy for almost all children to assimilate are milk and small quantities of cream, well-cooked cereals, baked potatoes, fresh eggs, and mild fruits, green vegetables, and well-baked bread with butter.

Milk stands first as a food for children of all ages, not only because of its highly nutritious properties, but because of its ready digestibility. Children should not be encouraged to dislike milk. Now and then a rare child feels an actual aversion to raw milk and is unable to digest it, but he can usually be made to assimilate the proper amount (1 quart per day) by its use in cooking, as in puddings and soups.

Cereals, if properly prepared, are easy of digestion. Those obtained from the whole grain, such as rolled oats and wheat, are preferable to the finer preparations, such as farina and cream of wheat. The dry cereals of known purity, such as shredded wheat, corn flakes, puffed wheat, and granose biscuit, tend to promote better digestion than the "mushes," because they compel thorough chewing.

Eggs to the amount of one a day are easily digested if they are fresh and soft-boiled (they should never be fried). They can be used to good advantage in custards, bread puddings, and simple desserts, as well as in soups.

Fruits, which are a daily necessity for all children, must be selected according to the age of the children. For those between 1 and 4 years old the fruits should be limited to orange juice, baked apples, and prune pulp. The older children can easily digest any mild fresh fruit in perfect condition or stewed, dried fruits, such as dates, prunes, seedless raisins, and figs. The dried fruits should all be cooked without sugar, as they contain large amounts of fruit sugar, which is much more digestible than cane sugar. Bananas and apples that are baked are more digestible than raw ones. The indigestibility of uncooked bananas, however, can be largely overcome by scraping off their soft granular surface, which is composed of raw starch.

Fresh vegetables, another necessary item in the daily diet, are easy of digestion when properly selected and prepared. The youngest children should have the mild flavored ones, as carrots, spinach, and string beans, which should be thoroughly cooked and rubbed through a sieve or finely mashed. The older children, who do not need their vegetables mashed, can have celery,

onions, cauliflower, turnips, and squash in addition to the vegetables allowed to younger children.

Bread, a constant necessity in a child's diet, is readily digested if thoroughly baked and at least a day old. Corn bread, brown bread, graham and whole wheat breads are desirable variations on the staple white loaf. Zwiebach and toast, if thoroughly dried, are more digestible than ordinary white bread, as the second baking converts the starch into dextrose, a form of sugar very easy to digest.

Meat is not included in the list of foods easily assimilated, as it is a distinct tax to the digestion of children under 8 years old. Even for the older children, who may have meat in small quantities, it is well to provide as many meat substitutes as possible; for meat, though nourishing, tends to develop putrefactive poison in the intestines, thus inducing fatigue. Among the numerous good meat substitutes are the following: skim milk, cheese (preferably cottage cheese) which is as rich in protein as whole milk, beans, eggs, nuts—ground or thoroughly chewed—and prepared vegetable proteids. A little caution is necessary in the use of beans, cheese, and nuts, which must be taken in small quantities according to the digestive capacities of individual children. It should also be remembered, when it is desired to cut down the amount of meat, that oatmeal, macaroni, rice, and gluten flour contain more protein than potatoes or white flour.

White fish of various sorts are distinctly more digestible than meats. Soup meat also is more wholesome than juicy meat, as it has been deprived of its uric acid-forming elements, and has still all its protein left.

MRS. ROSS.—Will you not tell us specifically what foods to avoid giving to children?

DR. LATTA.—Assuredly. I have already spoken of meat as being undesirable for children under eight. In the same condemned list stand fried foods, pastry, fresh rolls and bread, syrups and preserves, candy, except in small amounts at meals, and cake, except in small quantities in the form of cookies, sponge-cake, and gingerbread. No tea, coffee, beer, lemonade, or soda water should be given. Children over six may drink weak cocoa made with milk.

MR. ROSS.—Why limit the candy so strictly? If sugar supplies strength, why is not candy a good food?

DR. LATTA.—Because cane sugar, from which candy is made, can be digested only in small quantities. One more word as to the foods which I have recommended as easily digestible. These cannot, of course, be expected quite to digest themselves. The children must do their part by faithfully chewing their food; the mothers theirs by avoiding monotonous routine in arranging meals.

Variety in diet has a marked effect upon its digestibility. The food elements, it is true, should be provided in constant proportion, and but few articles should be supplied at a single meal, but within a week the articles should vary greatly. Surprises and special treats at the table give children wonderful pleasure, thereby stimulating their digestion in marked degree.

Indeed, the greatest of all aids to digestion is an atmosphere of good cheer, for the nerves that govern digestion are powerfully affected for good or bad by the state of mind. A scientific diet is powerless to secure a good digestion if children are not happy at their meals. For either parents or children to bring anything but hopefulness and good-will to the table should be regarded as a family crime, which strikes at the health

of every member. The crowning touch of wholesomeness which a mother can add to the carefully selected and prepared food she offers her family is an atmosphere of good-fellowship and mirth, to which she should require every one at the table to contribute.

Foods that are naturally easy to assimilate can be rendered indigestible as well as dangerous by careless handling or wrong cooking. To be safe, food must be free from impurities, clean, and fresh. A freshly prepared warm meal is far more digestible than a cold lunch which may contain exactly the same materials. Even a single warm dish, such as a bowl of hot soup, goes far toward transforming a cold lunch. Mothers who habitually provide "pick-up" lunches for the children because the father is away at noon make a great mistake. Children need as wholesome food as the father does. The value of warm lunches for school children has been well demonstrated by the Philadelphia experiment previously cited, and Philadelphia is only one of more than forty American cities which are giving successful demonstrations in the proper feeding of school children.

The three necessary qualities of digestible food—purity, cleanliness, and freshness, and, we might add, savoriness—can be controlled in large measure, but not entirely, in the kitchen. In the cities children are often at the mercy of the dealers who supply their food. Mothers are not always sure of protecting their children against contaminated milk, stale eggs, embalmed meats, and various adulterations. It is necessary, therefore, for them to be alert as to the sources of the food they buy, and to exercise their influence for the correction of dangerous conditions in its preparation or handling.

Dealers are sensitive to the complaints of their customers. The grocery store, for instance, that swarms


with disease-distributing flies, would be cleaned up in two days if the women customers made up their minds to require it. The dirty milkman would overhaul his shop if mothers insisted upon it.

Providing the right food for children is evidently not altogether a household matter; mothers, in order to have the right food in their own homes, must help get it right for the whole community. There is no more vital community problem than this, and no more worthy field of work for women.

B. *Foods That Assist the Elimination of Waste.*—A properly balanced diet must stimulate the bowels to remove thoroughly all waste. While the diet cannot be held completely responsible for this important function, it plays a very important part in its performance. The daily diet should always contain some materials which assist the action of the liver and bowels.

Fruits and green vegetables best serve this purpose and are accordingly indispensable for a healthy digestion. Certain fruits and vegetables have a more decided effect than others. Spinach and peaches, oranges and grapefruits, thoroughly cooked prunes and figs are all invaluable for preventing constipation. The seedy berries, such as blackberries and raspberries, are exceptions to the general rule of the action of fruits.

A great aid to thorough elimination is an abundance of pure drinking water. If the diet is too dry the processes of assimilation and elimination are greatly interfered with. It must be remembered that seven-eighths of the entire body is composed of water, that food to be assimilated must first be reduced to a liquid, that the skin and kidneys can eliminate poisons only when these are in liquid form. Plenty of water must be provided for these important functions. A good rule



is to drink a glass of water (hot or cold, according to taste) the first thing in the morning and the last thing at night. Water at meals is most desirable, in spite of the popular and unfounded notion that it interferes with digestion. One matter, however, should be guarded against in drinking water at meals. It should not be taken to wash down unchewed food, but merely to satisfy thirst. A child between 8 and 12 years old needs at least 2 quarts of water a day.

In following these general directions as to diet, mothers must remember that no rule, however good, works with every child. By careful observation they must find what forms of food seem especially adapted to their own children and what forms, if any, give rise to indigestion. Normal children, however, may be expected to thrive if their diet is intelligently regulated by the general directions just given. Children who do not so thrive should have the advice of stomach specialists.

SUGGESTED READING

BRYANT. *School Feeding: Its Organization and Practice at Home and Abroad.*

BURNHAM. *Food and Feeding of Children.*

THE CYCLOPEDIA OF EDUCATION, Vol. II., pp. 627-630.

DENISON. *Helping School Children*, pp. 160-164.

HOGAN. *Children's Diet in Home and School.*

HOME AND SCHOOL LEAGUE, PHILADELPHIA. *Annual Reports of the School Lunch Committee*, 1911 and 1912.

HUNT. *The Daily Meals of School Children.* U. S. Bureau of Education, Bulletin, 1909, No. 3.

KITTREDGE. *Report of the New York School Lunch Committee*, Journal of Home Economics, December, 1912.

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THE PSYCHOLOGICAL CLINIC, April 15, 1912. *Symposium on School Feeding.*

WITMER. *The Special Class for Backward Children*, Chapter VII.

XIV

CLOTHING

DR. LATTA.—What clothes to wear? This question begins to press even before the baby is born, and continues with unremitting insistence until it receives its final answer in the form of the shroud. Like the other fundamental requirements of civilized man, clothing should be regulated by a few important principles.

The two watchwords for clothing children properly are *comfort* and *cleanliness*. If clothes are comfortable and reasonably clean they serve all the purposes of health.

COMFORT

MISS PARSONS.—Absurd as it seems, I am puzzled to know when clothing is really comfortable. It cannot be that all the surprising demands of children's fashions are comfortable, and yet children endure them without complaint. My neighbor, for instance, who is very faithful in her observance of styles, puts a thick flannel suit on her nine-year-old boy in January, and on his seven-year-old sister a light lawn dress, low in neck and short in sleeve. Neither child appears to be uncomfortable, though it is true each one has catarrh.

DR. LATTA.—It is quite possible that the catarrh is due to improper clothing in the case of both these chil-

dren. The boy may be dressed too heavily and the girl too lightly, and both be suffering injury, though unconscious of it. It is not safe to leave the choice of suitable clothing to children, who usually show great indifference in the matter.

MR. MARTIN.—What other guide is there to follow?

DR. LATTI.—There are definite standards of comfort which parents can easily follow in selecting their children's clothing. Clothes to be comfortable (1) must not press upon the body or obstruct free muscular play; (2) they must protect against exposure to cold and wet; (3) they must not be oppressive. These are universal rules, the application of which, however, varies greatly in individual cases.

1. *Clothing must not constrict.*—No bands must be allowed to press; if they leave markings on the body they are too tight. Garters must not exert a perceptible pull; no buttons or hooks should be hard to bring together; no shoes should press or twist or rub. Shoes should have broad, low heels and substantial soles, and be straight on the inside line; they should fit the instep and heel snugly and leave the toes free. The growing child must have free circulation and unrestricted activity of muscle. Unless clothing allows fully for this, it does great harm.

There are many devices for minimizing the pressure and strain of clothes. Socks in warm weather do away with garter strain; union suits and one-piece dresses lessen the number of waist-bands. Loose trousers for boys and jumper blouses and bloomers for little girls make the desired tree-climbing and fence-jumping easy possibilities. Devices should be studied that are suitable to the climate and that will free children from the burden and restraint of clothes.

2. *Clothes must protect against exposure to cold and wet.*

MR. MARTIN.—That injunction, may I say, is not as simple as it sounds. How is one to know the weight of clothing necessary to protect against exposure to cold? My boy Henry, who dresses in light linen, is always warm from head to foot, while Katherine, swathed in flannels, shivers by the fire. There seem to be no standards for linens and flannels, as there are for bands and garters.

DR. LATTÀ.—There can be no fixed rules for the weight of clothing as long as every child is unique in the rate of his circulation, the number of his red corpuscles, his amount of fat, the vigor of his exercise, and his natural resistance. Every child must be studied and dressed according to his individual needs, and he must wear enough clothing to prevent his being chilly or damp. If your Katherine seems to need more clothing than most other children do there is probably something wrong with her. Find out what it is, but give her the **extra** clothes till you correct the condition that has **lowered** her resistance.

MR. MARTIN.—How do you determine whether a child is warmly enough dressed?

DR. LATTÀ.—A very simple but effective test is to find out whether his hands and feet are warm. If these are cold the child either needs more clothes or an improved circulation. This point brings up a matter which needs emphasis for all children, however hardy. The extremities **must** always be kept warm and dry. Sound rubbers, and arctics in severe climates, are no less necessary than **overcoats**; mittens and warm caps are as important as **undershirts**. Few children can resist colds and sore throats **when** their feet and hands are wet or

chilled, or escape catarrhal troubles when piercing winds reach unprotected glands in their heads and necks.

An indispensable aid in keeping children warmly enough dressed is the thermometer. Indeed, in our climate of marvelous changes the mother who presumes to decide what her children shall wear outdoors without consulting an outdoor thermometer puts herself quite at the mercy of the weather man. Living in a sheltered apartment or flat, she often sends the little ones off to school or out for their morning's play quite unconscious that the mercury has dropped 30 degrees in the night. A thermometer outdoors and indoors is necessary for anything but the most haphazard regulation of children's clothing.

3. *Clothes must not be oppressive.*—If a healthy child perspires without exercising rather vigorously he is too warmly dressed. Children who in winter must live in overheated houses and schoolrooms should dress almost as lightly as in summer. Clothes that overheat children cause far more disaster than those that leave them exposed. A perspiring child, going into the cold, is robbed of his natural means of resistance. Evaporation is reducing his heat at a dangerous rate, and his relaxed skin cannot quickly contract and protect him. On the other hand, a lightly-clad child who is not sweating loses no heat through evaporation and has, moreover, an effective natural protection in the contraction of his skin and outer blood vessels which drives the blood inward, where it does not lose heat, as it does on the exposed surface. The bodily warmth is maintained and the child comes through a brief exposure safely. A valuable rule for saving children from the oppression of clothes is to dress them as lightly as possible without allowing them to be chilly.



"HITTING THE HEALTH TRAIL."

These Eskimo suits enable even frail children to gain the vigor offered by a winter out of doors.



A WINTER PRESCRIPTION.

Equal parts of out-door work and play are proving highly successful with these St. Louis children.

1. The first part of the document is a list of the names of the persons who were present at the meeting.

2. The second part of the document is a list of the names of the persons who were not present at the meeting.

MR. MARTIN.—Do you approve, then, of my Henry's going so thinly clad?

DR. LATTA.—Decidedly. There is no more active creature alive than a ten-year-old boy. Why should he want flannels in our warm houses? If he attended an outdoor school and his home were kept as cool as English houses, he would need warmer clothes, but under present conditions he does not.

Now, just a word about flannels. Pure woolen underwear is desirable for very young or delicate children or in very cold climates. Hardy children in moderate winter climates, if their outer suits are woolen, are better off without it; so are their mothers, to whom the problem of supplying expensive flannel undergarments and keeping them properly washed without shrinking is often a great burden. If moderately warm underwear is desired it can be found in the excellent cotton and linen substitutes for wool now on the market, or in garments containing a small proportion of wool, for it is to be remembered that wool possesses no magic property of its own for "keeping out the cold." The secret of its efficacy is the natural roughness of its texture which contains multitudes of tiny air chambers. Any other fabric spun and woven as wool is, to the extent that it possesses similar air chambers, has the same protective value as wool. As yet, however, no substitute has quite reproduced the springy mesh of wool which continues to serve best when a maximum protection is required. For this reason all cold weather outer garments, which at best are somewhat burdensome, should be of roughly woven pure wool, thus relieving children of every ounce of superfluous weight. It is a good plan also to have a little high-grade woolen underwear in reserve for some unaccustomed exposure, or an occasional cold snap.

MRS. ROSS.—Many of my friends would be horrified to make any such change in the weight of their children's underwear during the winter. Two changes a year, one in autumn and one in spring, is their rule.

DR. LATTA.—And when their children take cold they lay it to the changing weather and not the unchanging clothes, do they not?

MRS. ROSS.—To be sure. I did the same thing until it occurred to me to adapt my children's clothing to the weather. In this matter the thermometer, as you suggested, is a great help. One soon learns what weight of clothing best suits a child at a given temperature. The thermometer indicates reliably whether it is a day for the heavy or the light overcoat, the sweater, or the thinnest dress. All these articles are often needed within two days or even one.

MISS PARSONS.—Striking evidence of your words is given in the Chicago weather record for May, 1911, which showed a range in temperature from 33 degrees to 94.2 degrees. The whole month was a mad mixture of frost and torturing heat and snow. One can imagine the difficulty the mothers had in keeping their children sufficiently and not oppressively dressed during these bewildering days, and their sorrow, too, at the toll of sickness and death that the erratic weather exacted.

DR. LATTA.—The difficulties would have been under control and the sickness in many cases prevented if mothers had realized the value of following the vagaries of the weather with their thermometers. If a day dawns hot, even after a snowstorm, children should shed their warm clothes. If the next day is ushered in by frost, they should put them on again. There is no other safe way.

CLEANLINESS

1. *Clothes must be reasonably clean.*—Only reasonably. Mud and stains on the outside, unless of long accumulation, do no damage to health. The state of the underclothes is a more important matter, for it is through them that poison may be absorbed back into the blood.

Those shrewd Orientals, the progressive Japanese, know the sanitary necessity of clean underclothing. During the war with Russia, whenever a battle was imminent, the order went forth for every soldier to bathe and put on fresh underclothing. Why? To guard against infections of wounds. Never in history did battle wounds show so small a proportion of infection. Losses from wounds in both armies, compared with losses in most prior wars, showed a reduction of about 60 per cent., the number dying from wounds being but 4.5 per cent. of the entire number wounded.

Clothing worn next to the body should be of coarse, soft mesh, as this has the triple advantage of absorbing perspiration, giving plenty of air space, and being easily washed. It should never be worn long enough to acquire the odor of the poisons absorbed from the skin and the bodily discharges. Soiled stockings must be particularly guarded against, as leather shoes keep the feet in an almost constant state of perspiration.

MISS PARSONS.—Many mothers find it too hard and expensive a matter to keep a family of children supplied with the right amount of clean underclothes, and they frankly give up the struggle. Are there not ways of simplifying the problem which will help them?

DR. LATTA.—In the tropics all the underclothes of

the family are washed every day as a matter of course and necessity. In our temperate land we are unfortunately bound by the tradition of "wash day." It is not always possible to get all the necessary washing done on that dedicated day. A little simple washing on one or two other days of the week, by either the servant or mother or children, would strain no one and might make it much more possible for the anxious mother to square her practice of cleanliness with her ideals.

MRS. ROSS.—The difficulty of keeping underclothing clean can be somewhat further simplified by the children themselves. They should always remove all their day garments at night, shake them out, and hang them to air. This clears the clothing from the particles of dead skin which are constantly rubbing off the body, and freshens them. Frequent baths also serve the double purpose of keeping children's underclothing, as well as themselves, fresh.

DR. LATTA.—Those are capital suggestions. Now, just a word concerning the cleanliness of outer garments. While the condition of the outer garments has not such an intimate bearing upon health, it is a great mistake not to have all children's clothes, except perhaps the hats and overcoats, of the kind that can profit by frequent immersions in the tub. When clothes are clean they are free from poisons and germs.

Night Coverings.—The principles which govern the selection of day clothing apply with equal force to the night coverings. The same care must be exercised to have them comfortable and clean. As the day clothes must not constrict or press, so the bedding must not burden children. Soggy, heavy, cotton comforters are abominations too often found in otherwise well-appointed nurseries. New cotton comforters covered with

a light material serve a useful purpose as extra coverings in cold weather; for daily use, however, wool and down comforters and blankets kept carefully washed give the greatest protection with the least weight.

MR. MARTIN.—It seems a trivial matter to mention, but I have a dreadful time keeping my children covered at all at night, regardless of whether the covering is wool, cotton, or down. They appear to take most of their exercise in their sleep.

MRS. ROSS.—I have found it an invaluable practice, until my children were six or seven years old, not only to tuck their coverings well in, but to secure them firmly on both sides with large safety pins. The arrangement is kickproof.

DR. LATTA.—That is an excellent plan to substitute for the common custom of mothers, which is to martyr themselves by rising frequently in the night to see that the little ones are covered. This practice is a sad waste of maternal energy, as wide coverings, securely fastened, serve the purpose even better than the visits stolen from the mother's rest.

Children require less bedding than grown people, and it is quite as important to see that a child is lightly enough covered as to heap on the bedding if he is cold. Consulting the thermometer to determine the right covering for a given night relieves a mother of much midnight care.

To keep beds fresh and clean is most important. Frequent sunning and airing are necessary for mattresses and pillows. An indispensable protection for the mattress is an easily washed quilted pad laid under the lower sheet. Unless such a pad is used a mattress inevitably acquires the stains and odors that lend a horror to second-class hotels and boarding houses, as well

as to too many hospitable homes. A mattress pad, washed when necessary, keeps the mattress fresh indefinitely.

May I repeat now, in closing, the two watchwords for clothing of all kinds—*comfort* and *cleanliness*.

SUGGESTED READING.

OPPENHEIM. *Care of the Child in Health*, Chapter VIII.

WOOLMAN. *Hints on Clothing*. Teachers' College Bulletin, Technical Education, Series A, No. 4.

XV

PLAYGROUNDS

"Happy hearts and happy faces,
Happy play in grassy places—
This is how, in ancient ages,
Children grew to kings and sages."

MR. YOUNG.—An ideal physical environment for our children! Every son's mother wants it. How many get it? Dr. Latta has been pointing out some of the practical steps necessary for securing the right conditions. He has shown us how to feed and clothe and air our children properly—new accomplishments for most of us.

These provisions are all fundamental, but they do not end the program. If we stop with food, clothing, and air, shelter, of course, being assumed, we provide rather less for our children than we do for our valuable horses and dogs. Such creatures must have their daily constitutionals on the avenue. What about our children? Dr. Latta will tell us what the recreational needs of children are.

DR. LATTÀ.—Next to the demand for food, the one conscious crying want of childhood is for play—active, outdoor, happy play. All parents know this. The need is pressed upon them a score of times each day, but seldom does it meet the full response it should. Not that parents are indifferent. They are glad to grant

their children the luxury of whatever outdoor play is compatible with the ordinary demands of the day, the weather, and the facilities at their disposal.

If, instead of a luxury, parents recognized abundant outdoor play as the necessity it actually is, they would abandon their present attitude of mere acquiescence, and move heaven and earth to secure it for their children. They would make it their first consideration in planning their children's days, in selecting the site for their homes, and even in choosing their own professions.

MR. MARTIN.—While I know in a general way that outdoor exercise is important for children, I should be very glad if Dr. Latta would explain to us why it is so. Just what does active play do for children, and is it really more necessary for them than for grown people?

DR. LATT.—The cell change in children's growing bodies is very rapid. This not only calls for active assimilation of food, but also results in the formation of much waste which must be promptly eliminated from the tissues and blood and bowels by the excretory organs. The organs, both of assimilation and of elimination, can be held to their proper work only when the whole body is regularly given vigorous and agreeable exercise.

Children find this necessary combination in outdoor play. Without it their circulation becomes sluggish and their muscles lose the tone necessary to carry on the vital processes. The results are likely to be anemia, malnutrition, and auto-intoxication. Children need more outdoor play than grown people do because their circulation, to be kept up to the higher rate necessary for their healthy growth, requires a greater amount of the stimulus that comes from agreeable muscular activity in fresh air. Don't misunderstand me to say, however,

that children need outdoor play more than grown people do. They simply need more of it.

MR. ROSS.—I notice that you emphasize the need of making exercise for children agreeable. Why so? Aren't we trying to sugar-coat juvenile existence too much? Isn't the wood pile, though less attractive than the baseball diamond, quite as effective an aid to circulation?

DR. LATTA.—By no means. A boy can chop himself out of breath on the wood pile, to be sure; he can also develop some stout muscle there. A certain amount of this labor will serve him well enough, but even a year of such work will never give him the rounded physical development that an active baseball season affords. In the stress of playing ball the whole boy is stimulated to keenest activity. Brain and nerves as well as muscles are all brought into powerful action by the joy and excitement of the game. It is only under the influence of joyful excitement that children discover their full physical capacities. Joyless exercise won't answer.

It is one thing to recognize the demand of children for play. It is another thing to meet it. The need for play space in our cities has become acute. The need for play supervision in both town and country is no less urgent. Individual parents cannot handle these problems alone. They can only be solved by coöperative effort of some kind.

In the cities parents meet their children's appeals for outdoor play with a sort of helpless despair. They cannot provide private playgrounds; neither can they deny the appeals. They are all finally forced to the same expedient—to turn their boys and girls into the common and usually sole repository for children, horses, motors, beggars, thieves, and dirt—the city street.

Here the children acquire muscle and lung capacity; also germs and vicious habits. The street exacts a heavy toll for the development it offers. Many children, to be sure, having no other place to play, would perish if they did not have the streets; but just as surely many children perish because they do play there.

MR. ROSS.—Now, before Dr. Latta's epigrams have us all converted to some new-fangled theories about children's play, let me ask a question or two.

In the first place, is it necessary for the welfare of children to provide them with as much opportunity and space for play as they demand? If my boy, for instance, were free he would never do anything but play—except at meal-time; and, as for roaming, he would stray to the very edge of the world.

Secondly, why isn't the city street a pretty good place to play in after all? If it answers for pedestrians, why not for playing children? The children don't object to it. My boy Edward, after a week's visit in a New York flat, came home to find his quiet, ample playground stale and unprofitable in comparison with the city pavements and the adventures they afforded.

Thirdly, if parents disapprove of city conditions for their children, why don't they leave the cities?

DR. LATTA.—Mr. Ross's protests have opened the entire playground question very satisfactorily. As it is one of those rare questions which has only one side, any approach, however hostile, leads to conviction.

In answer to Mr. Ross's first question, I will say that it is necessary for the health of children to let them have all the outdoor play they naturally want, just as it is necessary to give them all the food they naturally want. Their health is dependent on these instincts, which in both cases we have seen to be vital ones.

As for your boy, who you believe would do nothing but play if he were left free, may I ask whether you have ever tried the experiment? Normal children are fully as eager to work as to play, if they can find anything interesting to work on. When right occupations are provided for children, the number of their play hours can safely be left to their own natural desires.

Your boy's roaming propensities, too, are altogether wholesome. His feet are made to cover miles of earth. The best use he can make of a fence is to climb it. Let him roam by all means, but see that he does it in good company. Miss Parsons will give us some suggestions in this connection a little later.

"Why isn't the street a pretty good place for children after all?" Now and then a city street is. A few carefully selected, slightly traversed streets may be found in any city where the children can have wholesome, fairly safe fun. There are, in fact, in New York, Baltimore, and a few other cities little organizations called "Guilds of Play" which are devoted to promoting street play under competent leaders. These agencies are doing good pioneer work in demonstrating the desirable possibilities of street play.

The experience of Mr. Ross's son on the New York pavements shows the fullness of life that can be reached in these surroundings—dusty, dirty, and dangerous as they are. We certainly do not want to eliminate the children from all the city streets, but we do want to eliminate the dust and dirt and danger, social as well as physical, that at present confronts them there.

Even under the best regulations, however, the streets will never fill adequately the children's need for play space. Further provision must be made if the children

are to prosper in the cities. This brings us to Mr. Ross's third question—a most interesting one.

“If parents disapprove of city conditions for their children why don't they leave the city?” Most parents who can are doing exactly this. If those who can't could, the cities would be practically emptied. Or, if the people who wanted to live in cities stopped having children, what would the census look like in a generation?

Unless our cities desire to lead off in a race suicide crusade, they will not only have to stop making it a punishment to produce and rear children within their precincts, but they will have to offer all sorts of wholesome attractions that will invite the children to come and stay. Our most progressive cities are already alive to this need. We shall ask Miss Parsons to tell us of some of the steps they are taking to meet it.

MISS PARSONS.—First let me say just a word as to the significance of the playground and recreation movement which is now thoroughly launched in this country. Dr. Latta's emphasis on the need of play for children is in line with a great new idea which is stirring our country, and which is destined to have a powerful effect not only on the health but on the character and lives of our whole American people. Within the last six years it has been dawning on the national consciousness that the business of life is threefold—to work, to love, and to play; that the emphasis on these three great functions should be fairly equal; and, further, that a scheme of life which doesn't make ample provision for all three necessities—labor, human affection, and recreation—is bound to turn out warped and unhealthy creatures. This is just what has been happening for many years throughout our whole country.

Our laws and ordinances have always recognized the first two requirements of living—the need to labor and the need to love. The law allows no children over six to escape the call to work. Each boy and girl must give eight years to the long school grind. The law also recognizes the human need for love by protecting, as well as its clumsy ways allow, the source of all affection—the family.

How do our laws provide for recreation? They allow for a few holidays and impose a few Sunday restrictions, some of which greatly lessen the recreational possibilities of that day. With these few perfunctory provisions our cities and states until very lately have dismissed the subject of recreation.

MR. ROSS.—Surely that is not quite all they have done. Do not most of our cities, in addition to recognizing holidays, provide their citizens with parks and breathing places?

MISS PARSONS.—To be sure. But, beyond pleasing the citizens' eyes and refreshing their lungs, what purpose do these parks serve? Is our one little park in front of the City Hall in any sense a recreation ground? For fifty years it has stood there, a mockery to childhood, with its careful fences, "Keep Off" signs, and vigilant policemen ready to shoo away the children who venture on the smooth walks with their roller skates.

MR. ROSS.—Our town is not distinguished from other cities in that respect.

MISS PARSONS.—It has not been until recently. Our cities have generally been laid out with practically no provision for children's play. This is small wonder, for until very recent years almost no one beyond Froebel and his little stream of disciples has given a serious thought to this central need of childhood.

But the revolution has come. When the full meaning of the recreation movement once penetrates our town the children will have no difficulty in coming into their own. I predict that within three months our City Hall park will be given over largely to the children, and that before the movement loses headway with us we shall have municipal playgrounds, recreation centers, recreation streets, gymnasiums, and baths—and these in sufficient numbers to give every child of our town all the wholesome play and recreation that he needs.

MR. ROSS.—You will never get taxpayers to carry out so enormously expensive a program.

MISS PARSONS.—On the contrary, self-protection will compel them to do it, just as soon as they see that it costs less to support this program than the sickness and crime it will prevent.

MR. ROSS.—But does it?

MISS PARSONS.—There is much reason to believe so. It costs \$1.00 to keep a child in a playground six weeks. It costs from \$18.00 to \$40.00 to keep a child in a reform school the same length of time; and from \$40.00 to \$60.00 in a hospital. A very few children saved from reformatories and hospitals would mean a sufficient money saving to support a populous playground. The juvenile court records already show an amazing decrease in boyish crime in the neighborhoods where playgrounds have been established. Since playgrounds were opened in the stock yards district in Chicago five years ago, juvenile crime has been reduced on an average of 44 per cent. for the whole district—and what is still more striking—it has been reduced 70 per cent. in the immediate vicinity of the playgrounds, while only 28 per cent. in the regions farthest from them. In Cincinnati two years and a half of playground régime, between 1906 and

1909, reduced the number of delinquent children brought before the juvenile court about one-third.

Playgrounds have been improving health as well as morals. In Holyoke, Mass., the school medical inspectors have found a remarkable falling off in eye and skin diseases among the children who have had a summer of outdoor play. In Rochester the playgrounds have actually saved a number of lives by providing safe recreation. Before the playgrounds were established, there were annually 15 to 20 deaths from accidental drowning in that city. The year the playgrounds were opened the number fell to 3.

MR. ROSS.—I should like to ask Miss Parsons whether any cities have yet launched such a wholesale benevolent scheme for recreation as she proposed for our town?

MISS PARSONS.—Many cities are to-day working toward such a program. A few are already beginning to carry it out. Chicago leads the world by having the finest system of combined playgrounds and recreation centers to be found. That city is not afraid to spend money for play. Her expenditures in the decade from 1900-1910 amounted to \$11,000,000. In Sherman Park alone the recreation buildings cost over \$160,000. New York City has appropriated \$16,000,000 for promoting recreation.

Other cities have been hardly less liberal. Cincinnati in 1910 authorized a \$1,000,000 bond issue for parks and playgrounds; Oakland, California, a city of 150,000, appropriated \$430,000 for school playgrounds and their improvement; Grand Rapids, a city of 112,000, issued bonds for \$200,000 for parks and playgrounds. In 1911 nineteen cities authorized bond issues for recreation purposes to the amount of \$4,445,500. Of the 294 cities maintaining supervised playgrounds in 1912, 99 depended

entirely upon municipal support. The others received support from a variety of sources, municipal, county, state, and private funds. The drift is strong and rapid in the direction of public support. The number of cities establishing municipal playgrounds is increasing every month.

It is only the most unenlightened communities that are not falling into line. That keen-scented individual, the ward politician, has already discovered the popular appeal of the playground, and is now supplementing his time-honored method of bidding for favor with coal and turkeys, by securing recreation grounds for his neighborhood.

MR. MARTIN.—Our city evidently can not afford to lag behind in a movement that promises health and happiness to our children. We must have playgrounds, too.

MR. ROSS.—That is a rather startling proposition to be made so lightly. There are many things to consider before we shall be justified in calling on the public treasury for the amount necessary to establish playgrounds in our town. Among other things we must ask what department of the town government would best have them in charge; how many, where, and what kind of playgrounds we need. This subject is so new and untried for us that I, for one, should hesitate to make any important decision regarding it without at least a year's consideration and study.

MISS PARSONS.—Your attitude seems to me exactly right, Mr. Ross. We should surely be making a calamitous mistake to rush into a playground program without the most expert advice to guide us. There have been, indeed, in certain cities distressing instances of the misuse of playgrounds, which have been impulsively



THE ETERNAL SPIRIT OF PLAY.

Even the most cramped quarters of a crowded city playground cannot extinguish the instinct for play in normal children, but they make it difficult for any but the biggest and most boisterous ones to have a chance.



THE MOST EFFECTIVE ARGUMENT FOR PLAYGROUNDS.

The 1,200 children in the picture had no playground. This picture was effectively used by *Detroit Saturday Night* in a campaign which resulted in an appropriation of \$65,000 for a playground adjoining this school.

established without any provision being made for their careful supervision. Fortunately we need make no such experimental mistakes, for the methods of promoting, selecting, establishing, and supervising playgrounds have already been standardized.

The Playground and Recreation Association of America is bringing to a focus the best experience of the whole country in recreation work. More than that, through its conferences and conventions, its publication, *The Playground*, and its field secretaries, it is making this experience available to any community, urban or rural, that seeks its aid.

If we desire to establish playgrounds in our town the association can help us at every step. A field secretary can guide us first in a "Recreation Revival," which will probably be necessary to awaken public sentiment. During such a revival, which may occupy a week, every agency in the town that can possibly help should be pressed into service. Schools and churches, city departments, women's clubs, and private organizations of all kinds should aid in advancing the playground idea. Such concentrated efforts, though lasting but a week, have already accomplished in various towns far greater results than months and even years of scattering effort have done.

After the playground idea has gripped the town and a Recreation Commission been appointed—at present the best form of management for recreational affairs—we shall need expert aid in our next step, a "Recreation Survey" of the town. This survey will disclose exactly what our recreational needs and facilities are. As this highly successful form of calling attention to a public need is rather novel, I think you will be interested to run over a description of a recreation survey recently

made in Milwaukee. You will see that it calls for a very accurate as well as graphic presentation of the vital facts concerning the question of children's recreation in that community.

DESCRIPTION OF RECREATION SURVEY EXHIBIT

Prepared by Rowland Haynes, under the Child Welfare Commission, for the City Budget Exhibit at Milwaukee, Wisconsin, November, 1911.

1. Three poster charts showing what 1,421 Milwaukee children seen out-of-doors were doing:

18% working, 32% playing, and 50% doing nothing.

2. Map showing 20 blocks in Milwaukee where 1,058 children between 4 and 15 years of age live, with open spaces free for play, and land built upon or cut up into too small lots for play.

These lots and open spaces are shown in colors, and the children are represented by pins stuck into the streets and open places.

3. Chart showing a second Milwaukee neighborhood with relative amounts of open and occupied space, and traffic conditions of streets.

4. Map showing third Milwaukee neighborhood of 20 city blocks, with schoolyard within its limits and park playground adjacent, also several vacant lots.

The fact is shown that on a given Saturday morning, when 459 children were out-of-doors in that neighborhood, none were in the schoolyard, none were in the park playground, 38 were on vacant lots, 55 in private yards, and 366 on the streets.

Caption used: "Play Leadership Needed to Use Spaces We Have."

5. Charts showing density per acre in different wards of the city. Percentage of children to total population in the different wards.

Every 57 minutes, day and night, winter and summer, a Milwaukee child reaches the age of 5 and wants a place to play; every 72 minutes a Milwaukee boy or girl reaches the age of 16 and wants a good time.

Caption used: "Fight Vice with Wholesome Recreation."

6. Charts showing numbers, distribution, and capacity of mov-

ing picture shows and theaters, numbers of pool tables, billiard tables, and bowling alleys, with estimate given of where young people are on Saturday nights.

7. Chart showing that Milwaukee has grown six times as fast as rural Wisconsin in the decade, 1900 to 1910.

An idea of the form and arrangement most effective for such an exhibit as this of the Milwaukee Survey can be gained from the picture of the Philadelphia Baby Saving Show. (Page 198.)

When the survey is accomplished we shall need the association's advice in the selection of a permanent recreation or playground director, who has been trained for this work. The technical knowledge of such a man is indispensable in determining how best to meet the needs the recreation survey has disclosed. His technical knowledge is fully as necessary for the selection, preparation, and equipment of the playgrounds as for the subsequent promotion of playground activities.

MR. ROSS.—Miss Parsons has removed most of the difficulties which seemed to be in the way of launching our playgrounds, but I should like to question whether we are not being urged into a great outlay for something that will benefit only a section of our community—the poorer section. We shall not want to send our own children to these rough-and-tumble places, shall we?

MISS PARSONS.—Your boy Edward's experience with the street crowd in New York would indicate that the public playground is exactly where he would be best pleased to spend his time.

MR. ROSS.—Very possibly, but that is not where I should be best pleased to have him.

DR. LATTA.—Should not the boy's own advantage settle the matter? What charm has any playground or

the most fascinating apparatus in the world if there isn't a crowd of children to use it? Our sheltered, well-to-do children need the expanding influence of the public playground as much as our poor children do. The little starched paraders on the avenues have less fun, on the whole, than the freer children of the poorer streets. The rich children need the democratic sliding-board and the friendly wading pool, too. These necessities of childhood, under proper restrictions, should be set at convenient intervals all over the town.

MRS. ROSS.—I should be most happy to have my children enjoying such public privileges if they were under wise and safe supervision. Now, as to Edward's special need, may I ask Miss Parsons what provision has been made for gratifying what Dr. Latta considers the healthy roving instincts of boys?

MISS PARSONS.—The Boy Scout organization, with its "hikes" and camps, provides very successfully for this instinct, as well as for many other perplexing instincts of boys between twelve and eighteen. Cross-country walking clubs are another means of supplying boys with distance to cover. The Chicago Playground Association has lately been carrying on interesting experiments with clubs of this sort.

MR. MARTIN.—What about the girls? They number four to one in my family. Do the playgrounds take them into special account, and has there been any organization devised to serve them as the scout organization serves the boys?

MISS PARSONS.—You may well ask about the girls, for until lately their needs have been largely overlooked in favor of their more insistent brothers. In 1911 a director of the New York Child Welfare Exhibit discovered that there was just twenty times as much or-



ON THE TOBOGGAN TO HEALTH.

These Vermont children find full scope for their love of action on an inexpensive home-made slide.



BRINGING THE BEACH TO THE CITY.

An inexpensive device which provides the refreshment and exhilaration of water play to hundreds of Philadelphia boys through hot weather.

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ganized effort being made for the recreation and development of boys as for girls. This discovery brought about prompt action on the part of recreation leaders. Experts began to study the possibilities of the playground for girls as well as for boys, and soon introduced special games for girls over twelve. Most of these games are ball games of various kinds, requiring team work, a form of play which girls especially need, and they are proving highly successful.

In addition to having playgrounds at their disposal, American girls now have open to them a national organization for play and development which corresponds somewhat to the Boy Scouts. Leaders of the Playground and Recreation Association have launched an organization known as the Camp Fire Girls, which is admirably conceived to meet the needs and desires of young girls of all conditions and climes.

The organization is proving immensely popular and only waits for its rapid extension for competent women to take the leadership of the various clubs. In England the girls are being rapidly organized as "Girl Guides" with the assistance of Baden-Powell, the head of the Boy Scouts. These movements indicate clearly that the recreational needs of girls are being studied and met by those best qualified to handle them.

MR. YOUNG.—Our time will not allow us to follow these interesting details any further, but our discussion has already brought out two things of prime importance—the needs of public and organized recreational facilities for our children, and a practical program for obtaining them.

SUGGESTED READING

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE.
Public Recreation Facilities.

BOY SCOUTS OF AMERICA. *Official Hand-book.*

CAMP FIRE GIRLS. *Manual.*

GREEN. *Among School Gardens.*

GULICK. *The Healthful Art of Dancing.*

Camp Fire Girls. Manual.

PLAYGROUND AND RECREATION ASSOCIATION OF AMERICA.
The Playground (a monthly magazine).

SCUDDER. *Recreation for Rural Communities.*

RUSSELL SAGE FOUNDATION. (Pamphlets.)

The Exploitation of Pleasure.

Recreation Legislation.

The Unused Recreational Resources of the Average Community.

UNITED STATES BUREAU OF EDUCATION. *The Reorganized School Playground.*

XVI

HEALTH HABITS

MR. YOUNG.—If a child were a plant or a jellyfish, dependent for his welfare merely upon wind, wave, and weather, a right environment would be complete assurance of his health.

Our children are not jellyfish. They are startlingly free agents who react very vigorously to their surroundings, and if they react in the wrong way, they upset our best endeavors. A wholesome environment is an indispensable condition for children's health, but it is only a passive condition, and cannot possibly result in healthy children unless it is reinforced by the active coöperation of the children themselves. Their health still waits upon the final condition—their own habits. Dr. Latta will tell us what these habits should be.

DR. LATTA.—A youth's habits are the crowning test of his education. The organization of a child's whole mature life and character depends upon what habits of thought and action have been set in his early years. No higher responsibility and privilege ever come to parents and teachers than to lead children to form their habits right.

MR. ROSS.—You are, of course, referring to much more than mere health habits. It would be hard to see the connection, for instance, between the hygienic habit of brushing teeth and a great and good life.

DR. LATTA.—The connection isn't so remote. More than one great and good life has been wrecked by evil-smelling teeth and dyspepsia. In emphasizing the overwhelming importance of habit I am, it is true, referring to all the habits of thought and emotion and conduct which make up personality. The health habits are bound up with all these and cannot be completely disentangled from them.

A man's habit of cleanliness, a mere physical habit, if you will, has much to do with the spiritual impression he makes; and, again, a man's habitual outlook on life, a mere spiritual phenomenon, you may say, has a powerful effect on the efficiency of his stomach. There is no habit which does not exert a shaping influence upon both mind and body.

There are, however, a group of habits whose first object is the promotion of personal health and strength. These concern the daily routine of the bodily machine, whose efficiency, as in the case of any machine, depends on proper use and care.

HEALTHFUL BODILY HABITS

The bodily habits have to do with breathing, eating, elimination of waste, exercise, bodily carriage, cleanliness, and rest. The rules which should govern these processes are simple and few, and can be both well comprehended and practiced by fairly young children.

BREATHING

Respiration is the most urgent of all the bodily processes. As the suspension of this vital process, even for a short time, causes death, nature has arranged for

respiration to be automatically carried on by the lower nervous system, without the aid of conscious effort. Through another set of nerve connections respiration can also be converted into a conscious act, which makes it possible to regulate the habits of breathing. These habits are of immense importance. They are indicated in the following brief rules:

Breathe through the nose.—The importance of the form of breathing has already been discussed. If a mechanical obstruction prevents nasal breathing, the condition should be corrected. If mouth breathing is a mere habit, it should be broken up.

MR. MARTIN.—How can it be broken up?

DR. LATTA.—By enlisting children's efforts in their waking hours and giving them mechanical help, if necessary, during their sleep. If children's noses are unobstructed it is quite safe to have their mouths held closed at night by means of an elastic support passed under the chin and over the head.

MRS. ROSS.—I found an even simpler device which proved highly successful in overcoming the mouth-breathing habit in our boy. His upper jaw was becoming much distorted from his habit of leaving his mouth open. Our dentist assured me that it would do little good to straighten his jaw if the boy did not restore normal pressure to his mouth by keeping his lips closed. The dentist suggested that I paste a paper label across Edward's lips after putting him to bed. This I did, taking care that the label should stick only to the skin above and below the lips so as not to irritate the sensitive skin of the lips. While this little device was in no sense a gag, it did act most effectively as a constant reminder to the lips that their business was to stay closed. Edward has now completely overcome the need of the label.

Breathe with the diaphragm.—This method of inhaling, besides securing full breaths, exerts a tonic influence on all the abdominal organs, their circulation being constantly stimulated by the rhythmical pressure of the contracting diaphragm. Sluggish livers and stomachs are often connected with sluggish breathing, and can be corrected by correcting the breathing habits.

MR. MARTIN.—How is one to make sure that children are using their diaphragms when breathing?

DR. LATTA.—When the diaphragm is used the abdomen is visibly forced outward a little at every breath. Otherwise the upper chest alone is visibly extended. A certain amount of chest breathing is desirable, but it should never become habitual as a substitute for deeper breathing. To make diaphragm breathing easy, parents must provide bands and waists loose enough to permit full waist expansion.

Take a few breaths as full and deep as possible in the fresh air every day.—The best time to do this is on first going outdoors. The lungs at these times seem actually to taste the fresh air, and are stimulated by it to expand their capacity decidedly beyond their stale air limit.

This little practice of taking a few deep fresh breaths every day has a remarkable effect in keeping up the vitality and the resisting power of children. It is also of distinct service in certain emergencies, such as the beginning of a cold. It is often possible to check a cold in the incipient stages of chills and sneezes by breathing in the way described at the moment the approaching symptoms are felt. In fact, whenever a little extra strength or courage or energy are required, a few deep breaths of fresh air will usually provide the necessary power.

Breathe fresh air whenever possible.—The vital importance of fresh air we have already explained. It is equally important that children be trained to enjoy and demand it. A taste for fresh air is easily acquired and is a life-long safeguard against disease. The way to make children love fresh air is to give them plenty of it.

EATING

Selecting food wisely for children is one thing, and an important thing. Eating it is another thing, and fully as important. In the latter operation the children play the leading parts. In justice to a well-selected diet they must be taught to play their parts well, observing faithfully the following rules:

Chew food thoroughly.—Everybody knows the importance of this rule. How many people practice it? Fletcherism has become a household word, but by no means yet a household practice.

MR. ROSS.—And why should it ever become one? The human race enjoyed its meals in its own way scores of centuries before Horace Fletcher learned to chew. What right or reason has one man to try to upset the racial instinct to bolt food?

DR. LATTA.—You can't pin your faith to racial instincts when science pronounces them wrong, Mr. Ross. Our ancestors had their own reasons for gobbling. We have none. On the contrary, we pay a heavy price for perpetuating the table manners of the troglodites.

MR. ROSS.—Why is it so important to chew food? As I remember my physiology, there are quantities of contrivances below the mouth that are designed for nothing but the manipulation of foods.

DR. LATTA.—None of them is fitted with teeth, however. Mechanically considered, they are merely a mass of self-contracting elastic tubes. What sort of job can they make of stuff that needs to be chopped and ground?

Not only is the mouth most important as a food mill, but as a food converter. The starches are all digested in the mouth—or ought to be—by being ground up with the saliva. Starch indigestion, a favorite ailment of the day, does not occur among faithful chewers of food.

Eat regularly at proper intervals.—Next to thorough mastication this is the most important rule to observe in eating. The stomach becomes accustomed to a regular routine, and is more ready to work at the usual hour than at irregular times. Enough time must always be allowed between meals for the stomach to carry on its work of digestion, which in some cases requires four hours. Having but one compartment, it cannot properly handle a half-digested meal and a freshly eaten lunch at the same time. It should, moreover, have a chance to rest before a new task is placed upon it.

MR. MARTIN.—Doesn't the mid-morning school lunch interfere with this observance?

DR. LATTA.—Not necessarily. If a light lunch follows three hours after a light breakfast, and is in turn followed by a dinner at least two or three hours later, the stomach can handle it very comfortably. One lunch a day, however, in addition to the three regular meals should constitute the limit of indulgence for children. Candy between meals is, of course, taboo.

Avoid harmful foods.—Children should be made to understand what constitutes a suitable diet and to observe its restrictions as a matter of course. In addition to the usual articles of food and drink which children should avoid, such as tea, coffee, fried foods, and

pastry, there are certain foods, wholesome enough for some people, but actually poisonous to others. Strawberries, shellfish, even milk, act as poisons to certain constitutions. Children who happen to show such an idiosyncrasy, known as *allergy*, should be taught to recognize them and to make a habit of quietly avoiding the troublesome articles of food.

Use care in drinking water.—Children must be trained to avoid drinking water which comes from doubtful sources, such as attractive roadside brooks and enticing old wells. Danger lurks in any but certified sources of drinking water, and a little temporary thirst is a small price to pay for security from infection.

Another precaution very necessary to impress upon children is not to drink cold water when heated with exercise, unless the exercise is to continue for some time after the drink is taken. Everyone who has had any experience with horses knows the importance of this rule. The precaution is not usually so faithfully observed in the case of children, but the need for it is exactly the same. In this connection we should mention the paralyzing effect of ice water, which may well be called our national drink. The ice water habit is an acquired one, which children can easily be kept from contracting.

MR. MARTIN.—Should children be allowed to drink water at all at meal time?

DR. LATTI.—They should. Modern experiments have shown that it is highly desirable to drink water in small sips while eating. The water should not, of course, be at a freezing temperature nor excessive in amount. One glass at a meal is a good allowance. The harm in drinking water at meals comes when it is swallowed in large amounts to wash down unchewed food.

Eat only when hungry.—This does not mean that children should eat whenever they think they are hungry. Some profess to be in that condition all the time. When their normal appetites fail, however, it is a mistake to force them to eat. A diminished appetite indicates that the stomach's power of digestion is temporarily diminished. Rest may restore the power. Food that must be digested will only weaken it further.

There are certain conditions that depress the stomach powerfully, and with it the appetite. Unusual fatigue, pain, and great emotional excitement—notably anger and fear, are ruinous to digestion. The meal should wait till the unwholesome state of mind or body has been improved.

MR. MARTIN.—Would you allow children's appetites to dictate their choice of foods at all?

DR. LATTA.—This is advisable, provided they do not quarrel with the staples of their diet, their milk, cereals, and fruit. When they begin to crave abnormal things, like sour pickles, and chalk, and show an aversion to their proper fare, they need the advice of a stomach specialist or possibly some old-fashioned disciplinarian.

Drink abundant water.—This habit, if fixed in childhood, is a powerful defense against those arch enemies of civilized man, constipation, auto-intoxication, and kidney disease. The poisons which are constantly forming in the body and which should be eliminated by the kidneys and the skin can be discharged only if there is an abundance of water to dissolve them.

We usually understand by bodily cleanliness the condition of the skin. This is highly important, but rather less so than the internal cleanliness of the body. This can be maintained only by drinking plenty of pure water every day. It is an excellent habit to begin the day

with a glass of water, hot or cold, according to weather, vitality, and inclination. It is also a good plan to have other regular times for drinking water during the day. The habit soon becomes automatic.

MR. MARTIN.—What do you call an abundance of water?

DR. LATTI.—From a quart and a half to three quarts a day, according to the climate and the age and activity of the children.

Make every meal a feast of mirth.—This obligation rests on every food consumer. Good cheer makes even impossible food digestible. Heated arguments, cares, anxieties, and reproofs are as deadly table companions as flies. The intelligent household does not tolerate them.

No item in a child's whole education is more important than the art of cheerful dining.

ELIMINATION OF WASTE

The body would be destroyed in a few hours by its own poisons if these were not being constantly eliminated. The lungs, the skin, and the kidneys are discharging poisons from the system all the time. The lower bowels also are constantly gathering the poisonous waste discarded in the process of digestion. The frequent and regular discharge of this waste is an indispensable condition to health.

Keep the bowels active.—The necessity of a daily action of the bowels is generally recognized by mothers of young babies, but is not so often borne in mind after children have become able to care for themselves. Parents should not relax their vigilance until the habit is thoroughly fixed, and the children are trained to report

any failure of the daily action. If such failure is exceptional it can usually be corrected with a very slight enema. The use of the syringe should never become habitual, however. A chronic tendency to constipation cannot be altered by the use of either enema or drugs. Correct diet and proper exercise will conquer this difficulty with most children.*

While, in distinction from the bowels, the skin, kidneys, and lungs discharge their waste without conscious effort, it should be made plain to children that this process is greatly aided by wholesome bodily habits, such as exercising vigorously, drinking plenty of water, bathing, and breathing fresh air.

Keep the skin at work. One of the organs of elimination, the skin, needs particular attention to offset the enervating effect of civilized life with its deadening clothing and shelter. Frequent bathing to keep the pores clean and open is, of course, necessary, but a more active program than this must be followed to make the skin really vigorous enough to pass off daily the pint or two of effete matter that it should.

A very simple but effective tonic is a dash of cold water following a warm bath. This has an almost electrical effect on the skin, and in health it should be the invariable practice.

A quick, cold sponge bath in the morning is also an excellent means of developing a vigorous skin. This practice is desirable for children, who react promptly from the cold of the water and whose skin is soon glowing with warmth. When a sense of chill follows the bath, however, and the bodily temperature is actually lowered, the effect is only damaging. Delicate children can often be brought up to a state vigorous enough

* See suggestions on diet, page 230.

to profit by the cold sponge, but the process must be carried on with care and judgment.

Another vitalizing treatment for the skin is a thorough perspiration followed by a bath and rubdown. This process removes a quantity of poison from the body and sets all the surface nerves tingling with a new feeling of comfort and energy. This agreeable experience should be granted to children several times a week. Before long our schools will provide the opportunity for it in playgrounds, gymnasiums, and swimming pools. In the meantime it must be made as easy as possible for children to have a cool bath and rubdown at home whenever they have perspired freely.

A further means of keeping the skin alive and active is to let it enjoy a change of temperature now and then. Children are not naturally hot-house flowers. Their skins, as were those of their aboriginal ancestors, are made to resist heat and cold. It is actually undesirable that all the rooms in the house be of the same temperature and that children should always bundle up for a brief run in the cold. A short stay in a cooler temperature is always refreshing. It is in a long and gradual chilling that danger lies.

MR. ROSS.—Will you tell me why you are impressing us with all these directions for exercising the skin? We have our clothing and we have our furnaces, which our merely skin-protected ancestors did not have. We moderns could almost dispense with our skin. Why drag it out into such prominence?

DR. LATTA.—Because the state of the skin very largely determines one's state of mind, one's comfort, energy, and hope, or one's weariness and despair. This is no exaggeration. By far the greatest number of the nerves

of sense terminate in the skin. The sum total of their impressions has a tremendous effect on one's consciousness. If the skin is clean, healthy, and active, one's sense of existence is brightened by a thousand agreeable sensations. If the condition of the skin is bad the reverse is true.

No theory in health is more easy to demonstrate than this one, and no physical habit is more important to impress upon children than the habit of keeping the skin at work.

EXERCISE

While the vital bodily processes, digestion, circulation, respiration, and elimination of waste, are all carried on involuntarily, the vigor with which they are performed depends entirely on the tone of the muscles. This in turn depends on the exercise which is given to the voluntary muscles.

Keep the muscles firm and elastic. The stomach, the liver, the heart, and the other vital organs do not call for help in handling the details of their work, but they do make a daily demand for power to carry it on—the power that lies in firm, elastic muscles. To the extent that this power fails, the work of the vital organs fails. The only way to keep a good muscular tone is by regular and sufficient exercise. When children are allowed to follow their own instincts, which is seldom, they take all the exercise they need. They rarely need formal exercise in addition to their active play.

MR. MARTIN.—I wonder whether they don't often take more exercise than is good for them.

DR. LATTA.—Not unless they are stimulated to undue endeavor by the admiration or the taunts of their friends.

This, however, is one of the serious dangers of unsupervised play. It is not an unheard of thing for children to drop dead from trying to make records at jumping rope or to be badly injured by attempting other feats to which they are unequal.

Four cautions of utmost importance should be impressed upon children in connection with their exercise: (a) never to run or play actively until at least half an hour after a hearty meal; (b) always to stop when they are out of breath or their hearts feel oppressed; (c) never to attempt feats that they really fear; (d) never to cool off suddenly when heated, except by means of a cold bath, which should be followed by vigorous rubbing.

With these simple but imperative restrictions children should be encouraged to do all the running and jumping they want to, and to demand as their daily right three or four hours of active outdoor play. The weather, of course, often interferes with this ideal program. In that case the children should be provided with a sheltered space, either at school or at home, where they can be free to romp and roar as much as necessary.

If children who are housed do not have the chance to play as actively as they would like to, they should be given a few hearty gymnastics every day. Vigorous body bendings, swimming strokes, and dancing steps serve to keep the vital functions active till the skies clear.

The habit of exercise is the easiest of all habits for children to form. The only help they need is a good outdoor space and good leaders who can guide them in the most joyful and valuable pursuit of childhood—healthful, friendly play.

BODILY CARRIAGE

No one disputes the wholesome effect of an erect posture on both mind and body. The acquiring of a fine carriage is a matter on which enormous emphasis is laid in military schools—and in almost no other place. So desirable, however, is a straight and strong carriage considered that parents frequently send their boys to military schools for no other reason than to have them develop a military bearing. This magical bearing could and should have been acquired in the nursery, without the aid of a highly paid, brass-buttoned officer.

MR. MARTIN.—But how? Apparently the process isn't so easy, for three of my children have passed out of the nursery without gaining a creditable carriage.

DR. LATTA.—Either your children weren't well or some one blundered. If children are free from adenoids and eye strain and in reasonable health, straight backs are easy to come by; but the person in charge must understand well the two simple requirements for cultivating such backs.

MR. MARTIN.—What are these requirements?

DR. LATTA.—To hold one's own spine straight, and not to allow the children's spines to slump.

MR. MARTIN.—That sounds delightfully easy. But what has one's own spine to do with the process?

DR. LATTA.—Almost everything. Example is the most powerful force in the early education of children. If you want your children straight be straight yourself.

MR. MARTIN.—And when example fails, as I've seen it do, how is one to compel children to keep erect?

DR. LATTA.—How do they compel the boys in the military school? By making the acquiring of a correct

carriage the chief business in hand till the habit of a good position is thoroughly fixed. This process usually takes about six weeks. Most children are not too busy to afford that length of time for acquiring a permanently fine carriage. Could six weeks be spent in any better way?



ERECT CARRIAGE—A HABIT WORTH ACQUIRING.

By a little persistent effort, bad posture can be corrected and an erect carriage acquired like any other good habit.

MR. MARTIN.—I've been ordering my children to stand straight for far longer than six weeks, but you ought to see them when they attempt to straighten up. They fold their shoulder blades across their backs, point their chins toward the sky, and hollow their backs so grotesquely that I am relieved to see them relapse into

their natural slouch, which they soon do. Can you tell me how to make them really straight?

DR. LATTA.—If they will drop all their efforts with the smalls of their backs and their shoulder blades and chins, and observe the following simple directions, they can easily straighten up.

Push the neck back against the collar. Hold up the chest. Hold in the abdomen. Put the weight on the ball of the foot. Keep this position by day, and as completely as possible by night.

Six weeks of this régime will transform your crooked children.

CLEANLINESS

There are two kinds of cleanliness, æsthetic and hygienic. The former concerns itself with appearances and odors, the latter with actual conditions that determine health. Neither of these brands appeals naturally to the young of the human species. Not till the mating instincts appear are parents able to relax their struggles with their spontaneously dirty children. Without stopping here to discuss the various hopeful means of coercing children to keep decently clean, I wish to emphasize a few details of hygienic cleanliness which children are always eager to practice when the advantages are understood.

Keep the germs washed off. It does not impress little girls and boys much to be told that frequent bathing is a double safeguard to health, aiding both in the elimination of bodily poisons and the prevention of infection from outside. These important truths are too general to serve as strong motives. When children find, however, that their little wounds, their cuts and scratches and scrapes, never become sore or fester if well scrubbed,

and that burning, itching surfaces are soothed by cleansing, they develop an actual affection for soap and water. When they find that their sore throats and stuffy noses and uncomfortable eyes get well if kept clean, they themselves put in a strong demand for gargles, nasal douches, and eye washes.

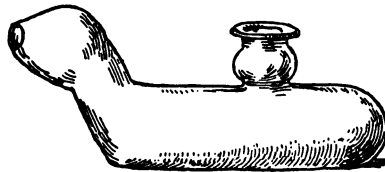
MR. ROSS.—You surely wouldn't make such clinical processes as these the daily operations of children?

DR. LATTA.—Only when an irritated condition of the mucous membranes requires it. This happens often in our barbarously dusty cities. Dust and germs lodge in quantities on the mucous membranes of the eyes, nose, and throat, and should be invariably rinsed out with a mild antiseptic if they cause the least irritation. Ordinary inflammation of the nose, throat, and conjunctiva (the mucous membrane of the eye) can easily be checked by a thorough cleansing of the infected surfaces.

The mouth and throat should be well rinsed out every day, the eyes whenever they show any irritation, and the nose whenever there has been exposure to infection from another's cold or whenever congestion, either chronic or acute, is present. In catarrh, nasal irrigation should take place twice daily till the condition is relieved.

MR. MARTIN.—I confess to some fear of nasal irrigation. I have heard that it is likely to set up trouble in the Eustachian tubes.

DR. LATTA.—So it is if not done properly; that is, if liquids are inhaled or injected into the nose. This method is very likely to force



NASAL CUP.

This allows a cleansing wash to flow through the nostrils without the strain or pressure caused by inhaling liquids.

some of the liquid into the Eustachian tubes and thus inflame them, but if the liquid is allowed to flow gently into the nasal cavity from a glass cup designed for the purpose, the operation involves neither discomfort nor danger. This means of cleansing and disinfecting the nose has wrought a revolution in the control of nasal affections, and has put many of the ineffective atomizers into the historic museums, where they belong.

MR. MARTIN.—What antiseptics should be used in these various washes?

DR. LATTI.—For the nose, throat, and mouth a salt solution—one-half teaspoon to a glass of warm water—is effective and safe. Solutions of listerine, glycothymoline, certain alkaline tablets, and other mild antiseptics

are useful, but the brands and the strengths of solutions should have the endorsement of your physician. For a mouth wash alone a solution of 2 teaspoonfuls of cinnamon oil to a pint of water is excellent.

For the eyes there is nothing better than a solution of boric acid—2 teaspoonfuls to a pint of water. This solution should be kept ready in a clean, covered bottle and applied with an eye cup or poured into the eye as the head reclines. The easiest way to rinse the eyes of little children is to have them lie down, and then to pour the solution over each closed eye separately. When the eye is

opened it immediately becomes filled with the wash without the discomfort that is caused by pouring it into the open eye. Boric acid must not be regarded as a



EYE WASH CUP.

The only way to cleanse eyes is to flood them thoroughly with a wash. The shape of this cup allows it to be inverted over the eye, thus insuring a complete rinsing.

medicine to apply gingerly in the form of drops. It is a cleansing wash that must be used liberally to be effective.

Before we dismiss the subject of washes we must consider the essential matter of clean teeth. These should be brushed thoroughly up and down—as well as sideways—with tooth powder or paste at bedtime. They should be lightly brushed also after breakfast, and as many times more in the day—on rising and after other meals—as inclination and convenience dictate. If children show an unusual tendency to dental decay or to a deposit on the teeth, they should be required to brush their teeth thoroughly two or three times a day. The presence of organic deposits is sometimes only discovered by a stain on the teeth which follows the eating of berries or grapes. This deposit should be kept scrubbed off, and the disordered stomach which lies at the root of the trouble brought to a healthy state by a correction of the diet.

MRS. ROSS.—Before the general topic of cleanliness is dismissed I should like to ask Dr. Latta just how much bathing children need to keep wholesomely clean. The complete daily bath is, of course, an ideal arrangement, but is far from easy to accomplish in large families with limited facilities.

DR. LATTI.—A partial bath at least should be given every day, either on rising or at bedtime. This should include, besides hand, face, and fingernails, ears, neck, armpits, crotch, and feet. Not less than once a week there should be a complete bath, including hair and scalp if possible, in warm water with plenty of soap, to be followed by a dash of cold water and a vigorous rub. In addition to the thorough weekly cleansing, the whole body should be bathed whenever it has perspired freely.

It should also be an invariable rule to cleanse immediately any part of the skin that has become abraded or cut, and to protect it from further infection by a simple antiseptic dressing. Boric acid powder scattered over the surface, which is then bound up in aseptic absorbent cotton, is an easy and effective way to dress a simple wound.

Do not collect or distribute disease germs.—Clean habits are no less important for the children who practice them than for their associates. Particularly is this true of the habits that concern the spreading of disease germs. In addition to keeping well washed, children should observe strictly the following rules for preventing infection to themselves and others:

- Never handle the organs of the body, as mucous membranes are easily irritated and infected; don't pick the nose, but always carry a handkerchief. Don't rub the eyes or any other organ.
- Never put anything in the mouth except food and drink or things intended for the mouth.
- Never exchange or lend candy, gum, whistles, or anything that is intended for the mouth.
- Never kiss upon the lips; kiss the forehead or cheek.
- Never face another person when coughing or sneezing.
- Never spit where it will be possible for the feet or skirts of others to catch up the germs you have left.
- Never leave anything dirty or offensive exposed where it can be an annoyance or where it can be reached by flies.

A clean body in clean surroundings holds disease at arm's length.

REST

In our discussion of a school child's daily schedule we heard some good suggestions concerning rest, among them being the necessity of long hours of sleep for children and the need of a partial rest after hearty meals.

In addition to arranging for such rest parents must see that the children actually get it. Many children, through poor nervous control or indigestion, have much difficulty in getting to sleep or in really resting when they need to during the day. This is a serious condition which, if continued, is bound to do permanent damage to the nervous system. Restless nights can often be corrected by simplifying children's suppers and avoiding any exciting or straining occupation during the hour before bedtime.

Learn to relax.—Often, however, the failure to rest properly is merely a bad nervous habit and must be corrected through the coöperation of the child himself. Many of our children even at an early age need instruction in the art of repose, the only defense against our constantly intensifying modern life. They must not be allowed to outgrow the power they had as babies of completely relaxing their brains, nerves, and muscles. Sleep cannot long resist such an invitation.

A moment or two of such genuine relaxation during the day is often of great value, averting many stormy tantrums which are merely the automatic results of overwrought nerves. I know one mother who, when she saw signs of an approaching fit of rage, as her little girl called the unhappy visitations, told the child that if she would sit very still and let herself feel heavy the fit would pass by without touching her. It did, and the

little girl was so pleased with her success that she forthwith adopted this method of relaxation for use in moments of emotional temptation.

Do not dawdle.—Some children unconsciously try to rest by dawdling half-heartedly over their occupations. This is a pernicious habit, bad both for nerves and character. Children should either be engaged in hearty activities that interest them and are worth while or should be frankly resting. They should not be reproached for occasionally lying down or sitting in complete idleness. The vacant, contented look they wear at such times means rest. It is their aimless movements and efforts that must be checked. Dawdling around is neither work, play, nor rest. It opens a sure approach to vicious habits of various kinds, and finds no place in a well-appointed life.

Children who are able to direct their energies vigorously and effectively and know when and how to rest them have learned a fundamental lesson in self-control.

HEALTHFUL HABITS OF MIND

Cultivate cheer, hope, joy, and fun.—Good health requires that the state of mind be under control as well as the state of body. Certain habits of thought and feeling should be persistently cultivated, others as persistently discouraged. A courageous, energetic habit of action, a cheerful, hopeful outlook, and a readiness to seize upon joy and fun, while not exhausting the list of moral virtues, are those that contribute directly to health and vitality. To help cultivate these tendencies in one's children is as important as providing them with food and baths.

Refuse to feel anger, fear, and worry.—Like poisons, to be shunned, are those deadly conditions of mind—anger, fear, and worry. They play havoc with youthful nerves, and should be guarded against with all possible care. No precautions can, of course, keep them entirely away from children, but the troubled moments, when they do come, can be made to have truly educational value.

If the anger, fear, or worry can be converted into desirable action, such as punching an offending ruffian, or leaping from before a rushing engine, or running for the doctor, it has served a useful end. It is the helpless bursts of anger and the unreasonable fears that must be firmly checked, and nothing is easier to do when the way is understood. If a child relaxes his muscles completely, or, better still, turns his attention to something worth while, his anger flees from him; if he takes a few deep full breaths his fear and worry depart.

These little physical suggestions outclass, both in simplicity and effectiveness, long moral exhortations which have small place in a nursery. It is easier for a small boy to relax his muscles or get busy than to "be good."

MRS. ROSS.—Are we, then, to cultivate our children's morals through their muscles?

DR. LATTA.—That is certainly a sound method of approach. Young children should be taught to use their muscles and their bodies morally. A healthy, well-occupied child is a good child.

MR. MARTIN.—One question more. In your discussion of habits you have said nothing about the vicious habits that we are always being warned to guard our children against.

DR. LATTA.—They would hardly come under a discussion of health habits. I may say, though, that, if

children master the habits we have outlined this evening, and spend their days in the vigorous manner suggested in our discussion of their daily schedule, they will have little time or inclination to cultivate morbid ways.

MRS. ROSS.—I am impressed with the vigilance it will require to see that children form all the good habits you have suggested.

DR. LATTA.—Eternal vigilance you may well call it. Children are forming habits of some kind every moment of the day. These habits, acquired in school and out, at work and at play, are the very essence of their education. Shall these habits be good or bad, healthful or harmful? Teachers and parents must give the answer.

SUGGESTED READING

GULICK. *The Efficient Life.*

HEALTH EDUCATION LEAGUE. *Habits of Health.*

XVII

CALLING THE DOCTOR

MR. YOUNG.—The chief concern of our club this year has apparently been to learn how to dispense with the doctor. *Disease prevention* has been our main study and the securing of conditions favorable for developing the health of children our steady purpose.

MR. MARTIN.—Is the family doctor, then, to become a relic of the past, and will the new generation be able to regulate that most highly organized of all mechanisms, the human body, without the aid of experts?

MR. YOUNG.—Hardly. A landsman can run the ship as long as the wind is fair and the course is set in an open sea; but, when storms or breakers threaten, the captain is the only man to be in control. The healthiest of us would make sorry work, at times, without the doctor. He must still preside at the supreme moments of birth and death, and on those other critical days when some unpreventable disaster threatens a life in the household.

The complete dependence that we often have to place upon him and the serious effects of his decisions upon the lives and happiness of ourselves and children make our selection of the doctor a very vital responsibility. *When to send for the doctor and which one to send for* are questions that parents are called upon to answer from the very first, and the wisdom of their decisions

often determines the very lives of their children. This evening we shall discuss these two questions, on which we are all greatly in need of instruction. Since the choice of a physician should always be made before a sudden demand for his services arises, we shall first consider the question "How to choose a doctor." Dr. Latta, who is far too busy to have any personal interest in the matter, will open the discussion.

HOW TO CHOOSE A DOCTOR

DR. LATTA.—When a father whose child is suddenly taken sick runs for the doctor, the chances are four to one that he will get an incompetent man.

MR. ROSS.—What do you mean?

DR. LATTA.—I mean that about four-fifths of our doctors have been so inadequately trained that it is dangerous to trust them with any serious cases.

MR. ROSS.—I can hardly credit your statement, Dr. Latta. Why are such men allowed to practice?

DR. LATTA.—Because both the federal and the state governments have given too little heed to the question of medical education. They have failed to realize that a properly fostered and regulated medical service would do more for the welfare and prosperity of the entire country than the best devised tariff or banking system, or even a three hundred and sixty million dollar canal. Without regard to the dignity of the profession or the welfare of the public, they have allowed inferior medical schools to spring up wherever private greed saw probable profit in such a venture. The result of this lack of government regulation is that we now have about five times as many medical schools as we need, and almost four-fifths of them are below the best stand-

ards. Many of our states annually turn out hundreds of ill-qualified doctors to prey on the public—men who have never become acquainted with the human body by dissecting it, or learned anything of sickness by seeing it.

Some of these medical men, to be sure, are gradually starved out of the profession, but during their slow elimination they are a substantial factor in keeping up the death rate.

MR. YOUNG.—Would there be enough doctors left if the unfit were all to be eliminated?

DR. LATTA.—Plenty of them. Germany, which maintains the highest professional efficiency of any European country, has only one-fifth to one-fourth as many doctors as we, and even of this smaller number few are properly supported. In our country most of the doctors are actually failing to make a living, and many who do manage to subsist earn less than skilled laborers do.

MR. ROSS.—May I ask Dr. Latta how he has been able to come by all these interesting and remarkably definite figures?

DR. LATTA.—In answer let me refer you to two very important reports on medical education made by Abraham Flexner for the Carnegie Foundation for the Advancement of Teaching.* These reports should be in the hands of every intelligent person in the country. They are highly instructive and decidedly interesting.

MR. YOUNG.—I have been told that these reports are so arbitrary and prejudiced that their conclusions are to be greatly discounted.

DR. LATTA.—Have you read them?

MR. YOUNG.—No.

DR. LATTA.—Do so, Mr. Young. The people who

* *Medical Education in the United States and Canada, 1910; Medical Education in Europe, 1912.*

see prejudice in the dispassionate array of facts, not opinions, which these reports present are those who supply their own.

MR. MARTIN.—Aren't these reports very technical and intended merely for medical men?

DR. LATTA.—By no means. They constitute part of much reliable medical information that is now being prepared especially for the general public. The time-honored policy of medical mystery has been displaced, you know, by a determination on the part of our leading physicians to share with the public whatever knowledge will be useful in the common crusade for health. The medical profession can make but little further headway in the conquest of disease unless the whole public joins in the effort and coöperates intelligently at every step. The wonderful campaign against hookworm in the South, for example, is primarily a campaign of popular medical education. "Making the hookworm interesting" through moving picture shows and all sorts of advertising devices is the chief concern of the able doctors who are literally transforming the South.

MISS PARSONS.—This new conception of the physician as a teacher was strikingly voiced by Dr. John B. Murphy in his presidential address delivered at the convention of the American Medical Association in 1911. He said: "It is my belief that public instruction in medicine is one of the most important functions which the American Medical Association has to perform. For centuries we have criticized the public for its lack of judgment in its selection of doctors. It has employed the quack, the sectarian, the chiropractor, etc.—and more enthusiastically supported them than it has the regular members of the medical profession. Why? Because these men give the patient some kind of explanation for

the results they claim to secure. They *educate* the people in their theories.

"What has the regular medical profession done to educate the public in the last three centuries? Nothing! What have we taught them of the real truths or principles of scientific medicine? Nothing! What beacon have we set for the layman to assist him in the selection of a skillful practitioner? None! Up to date the 'patent medicine almanac,' quack advertisement, and 'leaves of healing' have been the principal instructors of the public. So long as they continue to be the only sources of public education, just so long the public will be their patrons. When we supply the people with their medical education, based on science, they will become affiliated with us and sustain us in our every effort."

DR. LATTA.—Dr. Murphy's strong appeal has won a wide response, and his suggestions as to practical ways of educating the public are being already effectively carried out by groups of physicians in all parts of the country.

Now, before we consider what beacon we can set up to assist the layman in his choice of a physician, let me ask the members of this club what principles they have been following in the choice of their own physicians.

MR. ROSS.—I should say that Mrs. Ross and I hadn't followed any principles very consciously. When we moved to this town we selected the doctor who had the most prosperous looking establishment, attended what we considered the "best" families and who seemed to have the most to do. After two years we became dissatisfied with this man and chose the physician who ranked next in the qualifications I have mentioned.

MR. MARTIN.—I believe Mr. Ross's method of choos-

ing a physician is quite typical. I have taken the same way myself as far as my pocketbook has allowed.

DR. LATTA.—Your method of choosing your physician was certainly reasonable, provided you had no more accurate standards by which to measure his competency, but, unfortunately, the standards which Mr. Ross has advanced do not give his true measure. It is for the purpose of bringing out really accurate standards that we have been making this apparent digression regarding the number and character of the doctors and medical schools in the country, and the recent changes in professional standards. Before we can venture to select a doctor it is necessary that we have some notion of what medical training means. We must know that there are a few good medical schools and many poor ones, and we must know how to distinguish between them. We must also realize the emphasis which the leaders of the profession are putting on disease prevention and on public education as the most important means to this end. All these matters weigh heavily in the proper choice of the man who is to take our lives in his hands. We dare select no one who cannot pass creditably through some such examination as the following:

I. EDUCATION AND TRAINING

1. What was his general education before he entered a medical school?
2. From what medical school was he graduated?
3. What were its facilities—clinics, laboratories, hospitals, etc.?
4. What hospital experience did he have before or after graduation?
5. What professional connection has he had with any

other physician or institution of established reputation?

6. What courses of university or clinical instruction has he attended since his graduation from the medical school?

II. PROFESSIONAL ACTIVITIES AND STANDARDS

1. *Treatment of Disease.*—Does he diagnose and treat disease according to modern scientific standards, which require:
 - (a) Bacterial and chemical tests for the accurate determination of certain diseases.
 - (b) The use of antitoxins in all cases in which their value has been demonstrated.
 - (c) Attention to the sanitary care and surroundings of the patient.
 - (d) Open-mindedness with respect to therapeutic agents other than drugs.
2. *Prevention of Disease.*—Does he strive as energetically to prevent disease as he does to cure it?
 - (a) Does he observe the sacred law of medical cleanliness? For example, does he sterilize his thermometer and other instruments, wear cap and gown when visiting a contagious case, instruct his patients and their attendants in methods of avoiding the contracting or carrying of infection?
 - (b) Does he enforce quarantine regulations or does he connive with his patients in evading them?
 - (c) What part does he play in the efforts of the community to restrict disease? With

what organizations or movements is he affiliated?

- (d) What are his convictions and arguments as to the merits of vaccination, vivisection, "medical freedom," and other disputed health questions?

III. SUCCESS

1. What critical cases has he handled and with what results?
2. What families employ him and in what sort of health does he keep them?
3. What is his present standing with his professional associates and with the general public?

MR. ROSS.—Such an examination, if strictly acted upon, would put almost every doctor I know out of business. I fear there wouldn't be enough left to go round.

MISS PARSONS.—According to the Carnegie report there would be an abundance of them left. There are many really able physicians who, for lack of social connections or of suave manners, have failed to win popular confidence. These competent men could be substituted, with great profit to the public, for certain prosperous practitioners whose only claim for fitness are a happy bedside manner and the services of an excellent tailor.

DR. LATTA.—Certainly the only way to discourage stupid doctors is to select your men not on the strength of a polished or sympathetic bearing, but on the basis of scientific training and demonstrated efficiency. *Study* your doctor. Don't leave it to him to tell you how wise he is. He may be following the methods of the dark

ages. Remember that the slogan of the modern physician is: "Turn on the light." Look out for the man who makes a mystery of all he does, whose conception of duty is the mere prescribing of a few medicines for a few symptoms, and who stubbornly parries all your questions on the assumption that a little knowledge is a dangerous thing—for you. It is, to be sure, but not so dangerous as none.

MR. MARTIN.—Your words take away my breath, Dr. Latta! I thought it was the cornerstone of medical ethics to stand by your fellow physicians through everything.

DR. LATTAT.—That has been the basic principle of the medical profession viewed as a mutual protective association; but it is something far grander than that. It should be looked upon as a protective association for all society. One doctor has no right to defend another whose ignorance or avarice is a menace to the public.

Do not understand me as speaking in disparagement of the medical profession. Never before this day has it reached such a magnificent conception of its mission to humanity; never before has it grasped the mysteries and the control of disease and health as it is doing to-day. Just because the medical profession has so much to offer, and because the modern physician can be of such powerful service, I urge you to choose most carefully the man you call your doctor.

WHEN TO CALL A DOCTOR

MR. YOUNG.—We must know not only how to select a doctor, but when to consult him. Most of us have no standards for deciding this critical question. "You should have called me sooner" is the extent of the in-

struction which we have received on this point. Dr. Latta will explain to us what is meant by "sooner."

DR. LATTA.—There is no matter on which the medical profession so clearly needs to instruct the laity as just this. Speaking approximately, I should say that one-third of the people who consult physicians are suffering only from slight disorders that hygienic habits would have prevented and would still correct, while, on the other hand, more than half who do seek advice arrive too late to be cured.

MR. ROSS.—To be on the safe side, then, is it not better to let the doctor decide whether he is needed or not?

DR. LATTA.—If you mean that every one should occasionally be looked over by a physician to see that he is sound, I should say most emphatically yes. The annual physical examination which our school children now receive is necessary for discovering many defects and morbid conditions which would otherwise either remain undiscovered or be detected too late. The desirability as well as the economy of the periodic medical examination is already recognized by certain shrewd life insurance companies. Some of them offer their policy holders a free medical examination annually, and others go so far as to grant one whenever it is requested. A periodic examination is a powerful safeguard against the encroachment of serious chronic ailments, and should constitute a part of every one's annual program, just as surely as the summer vacation or the celebration of Christmas.

In the handling of acute conditions, however, the doctor is not always so important a figure as certain practitioners would have you believe. To be sure, if a patient and his friends are so uninstructed that they

cannot conjecture whether a pain arises from green apples or cancer, it is well to call some one who can; but such helpless dependence is not necessary and it is not encouraged by the best men in the profession. A physician with serious work to do teaches his patients to take some responsibility for their own health, to correct their own slight disorders, and to remove the causes of them, too.

MR. MARTIN.—What do you call slight disorders?

DR. LATTI.—I will enumerate them in a moment but before I do, I wish to make it clear that the list of symptoms which I shall offer must not be regarded as an infallible guide. The human frame is the most intricate and variable mechanism on earth and even the greatest diagnostician living would never venture to speak with certainty upon its condition unless he could confirm his opinion by a rigid laboratory test.

MRS. ROSS.—If it is so extremely difficult to make an accurate diagnosis, is it not reckless folly for a layman to attempt one under any circumstances?

DR. LATTI.—If every case required an expert diagnosis it certainly would be, but, fortunately for the human race, a rough and ready diagnosis is *usually* the right one. A certain set of easily recognized symptoms *ordinarily* indicates a certain well-known ailment, though, of course, there is always the chance that it does not.

MISS PARSONS.—I suppose if we allowed ourselves to take no chance at all on our health or personal safety we should be too wholly absorbed to permit ourselves any other occupation.

DR. LATTI.—Exactly. It would be idle for me to urge everybody to run to the doctor whenever he feels a little twinge or uneasiness. It is certainly the safest thing to do but it isn't a practical thing to do. I therefore consider

it of the highest importance for patients to know as definitely as they may the degree of chance they may be taking under various circumstances in neglecting to see the doctor, so that they need take no serious chance at all. Admitting that they always run some risk in looking after their own ailments, I am, nevertheless, going to give you a list of symptoms that ordinarily need cause no serious concern, and that are likely to yield to simple home treatment without the aid of a physician.

I do not claim that a single one of these symptoms *may* not indicate a dangerous condition. I have, in fact, met in my own practice very serious cases of appendicitis whose presence was manifested to the patients merely by some flitting pains and a slight general feeling of sickness. I have known a child with a fractured bone in her arm going about her play with little complaint of pain or loss of motion. Such cases, however, are most exceptional. Serious cases are usually indicated by definite symptoms, and it is in order that we may run no risk on these that we must distinguish them sharply from conditions that ordinarily need cause but slight concern. For convenience we shall group the less serious symptoms under six heads:

1. Pains without fever, that last but a short time and do not recur.
2. Moderate fevers that begin to subside as soon as the bowels have been thoroughly discharged and which are unaccompanied by eruptions, colds, sore throat, or vomiting.
3. Digestive upsets unattended by fever or exhaustion, or severe, prolonged, or recurrent pain.
4. Colds and coughs of short duration, which are unattended by fever or marked debility.

5. Wounds that can be thoroughly cleansed by home treatment, and are evidently able to unite without stitches.
6. Strains and bruises that do not impair freedom of joint or limb, cause no constitutional derangements, and in which swelling and pain subside within a day.

It is important, of course, to learn from a physician—never a druggist—the best ways of treating these minor ailments, and of preventing such as are preventable. This highly important knowledge, which is easily acquired and is in no way dependent upon previous technical training, should be sought by all responsible persons, and, most of all, by mothers and teachers.

The presence or absence of fever, a most important item in every diagnosis, is not a condition which it requires the visit of a doctor to determine. A clinical thermometer in the hands of a mother or teacher tells the story just as well. This instrument should be in every home and school. It is indispensable for forming any intelligent judgment as to the condition of an indisposed child, and its use not only saves doctors' time and patients' money, but on occasion gives the only indication of the urgent need of a physician.

MRS. ROSS.—Having learned now under what circumstances we need not call a physician, are we to assume that he will be required for all our other physical ills?

DR. LATTA.—He certainly should be consulted about any morbid symptoms that vary from those in the list I have given, as there is a strong likelihood that they indicate a definite disease, more or less serious. Remember that the most critical matters to observe in determining the seriousness of a case are *fever, pain, and*

exhaustion. A fever that does not yield after a clearing out of the bowels calls for medical attention; so do continuous pain and exhaustion. In fact, any unfavorable condition that does not soon correct itself should have the attention of a physician. Recurrent headaches and backaches, abdominal pains, swellings, and enlarged glands, persistent lumps, loss in normal weight, and any other mild but lasting symptoms require medical care. They should never be prescribed for by a druggist.

MR. MARTIN.—You have not mentioned eruptions or sore throats. Are these not often very serious symptoms with children?

DR. LATTA.—To be sure, and their seriousness is usually indicated by accompanying fever or exhaustion, for which you are always to be on your guard. Sore throats and eruptions, even when unaccompanied by fever, occasionally indicate light forms of contagious disease—measles, chicken pox, whooping cough, diphtheria, or scarlet fever. A child with such symptoms should always be isolated and examined by a doctor. A combination of cold or sore throat or vomiting, together with an eruption, almost invariably indicates a contagious disease, and, while very seldom occurring without fever, calls for immediate medical attention, whether accompanied by fever or not.

I will spare you a detailed account of the symptoms of the various diseases. Recent books on the health of children abound in diagnostic tables for the use of teachers and patients, and you can easily look up the particular shade of pallor or flush which matches the color of your child. We are interested now not in learning how to pronounce on certain diseases, but in learning how to tell whether we need the doctor for this purpose. As you have seen, the considerations which determine

the need of a doctor are simple and few. Let us sum them up now in brief form, easy to remember.

A doctor should be consulted at the following times:

1. At regular intervals of not more than a year, in order to guard against obscure defects and ailments.
2. Whenever lassitude, pain, swelling, or fever are not promptly relieved by rest, soothing applications, or a cleansing of the intestines.
3. When there is sore throat.
4. When colds and sore throats are accompanied by fever, rash, or vomiting.
5. When any unfavorable symptoms become chronic.
6. When accidents are of such a nature that there is any doubt as to the best treatment to be followed.

To follow these simple rules in sending for the doctor, instead of relying merely on one's state of alarm, is to substitute a reasonable degree of assurance for uncertainty and to increase very considerably the chances of good health and long life for one's self and one's children.

SUGGESTED READING

CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF
TEACHING.

(1) *Medical Education in the United States and
Canada*, 1910.

(2) *Medical Education in Europe*, 1912.

For aids in diagnosis see references at end of Chapter
II.

XVIII

HEALTH PROBLEMS IN CHILDREN'S INSTITUTIONS

MR. YOUNG.—In outlining a health program for children Dr. Latta has had much to say about the responsibility of parents. What is to be done for children who have no parents or such as cannot care for them? In our town there are about 200 children of this sort. While we are discussing means for improving the condition of our more fortunate children, we cannot overlook the orphans. Mrs. Ross, as a trustee of the County Orphanage, has asked that we devote an evening to the special health problems of children's institutions. Dr. Latta will open the discussion.

DR. LATTÀ.—The best institution for children who are not sick or disabled is the one that has closed its doors.

MR. ROSS.—May I ask what you mean by that cryptic remark? Should the children be locked in or out?

DR. LATTÀ.—*Out*, sir. It is neither desirable nor necessary that normal children be permanently kept in institutions.

MR. ROSS.—What other places are there for them?

DR. LATTÀ.—Private families, no end of them. Any genuine orphan without serious defects can actually have his choice of desirable homes. Australia has something to teach us in this matter. The word orphan is not used there, nor are there any orphan asylums. In

South Australia in 1911 the Children's Council had 1,479 children under its control, of whom it boarded out 1,220, put 7 in hospitals, and 32 in institutions for defectives and delinquents. The outlay for each child boarded out, including administration expense, was \$60 a year, which is \$40 less than the minimum expense for a child in our poorest institution, and \$140 less than in our most lavish ones. Besides being in a more normal environment at less expense than possible under institutional care, the children of Australia, after they are thirteen years old, are given a chance to better their own condition. In 1911 some of these children, by working part time, earned and deposited \$6,500 in the postal savings bank.

That the children do not suffer from the economy and simplicity of the boarding out system is strikingly shown by the reduction of mortality among illegitimate children, which has shrunk from 27 per cent. to 4.58 per cent. since the Children's Council began its work.

MR. ROSS.—Australia is pretty far away. The conditions may be so different there that the methods employed in meeting them would fail when applied to our problems. It seems to me far better to have children kept in well-run institutions than trusted to a miscellaneous assortment of families who, like as not, would want to exploit them under the pretense of giving them home care.

DR. LATTA.—Such a criminal way of disposing of children, while frequently practiced in the past, is hardly possible under the present approved method of selecting homes. This provides for a very careful investigation and continued observation of the families to which children are sent. Officers who could not be trusted to do

such work could certainly not be depended upon to run institutions properly.

The placing out system for children is, in fact, no longer an experiment. Australia is not alone in discovering that good private homes are far more desirable places for children to grow up in than even the best institutions. Our progressive states are all finding this out. Massachusetts in the last fifteen years has closed down thirteen institutions for children, though its population has increased greatly in that time. Indiana has similarly closed twelve of its fifty county children's homes, and is preparing to discontinue others. These changes in each state have been made possible by an extension of the placing out system. Michigan, Minnesota, Wisconsin, and Rhode Island each conduct but one central state school for dependent children; the policy being to retain the children there only so long as is necessary to find suitable free homes for them, and to prepare them for entering these. The results in the four states indicate conclusively that this mode of caring for motherless children is the best as well as the most economical that has so far been devised. Minnesota and Michigan particularly, having been almost entirely free from political interference, have met the needs of their children more adequately than any of our other states, and at a cost that seems incredibly small as compared with amounts elsewhere expended.

MISS PARSONS.—Just a word at this point. Minnesota and Michigan undoubtedly lead the other states in the success with which they have carried out their particular method. But, good as it is, it is not the last word in the care of a certain class of children now ranked as dependents. Some of our western states have lately taught us a lesson so obvious that we wonder why

we have waited so long to learn it. These states have concluded that the best possible way to arrange for dependent children who are not motherless is to board them with their own mothers. This arrangement provides for a large proportion of children who need public aid. The mother can rear her own children both more successfully and more economically than can any other woman who is paid to do it.

MR. ROSS.—Do you mean that public money should be given to mothers for bringing up their own children?

MISS PARSONS.—To be sure, if that is the only condition on which worthy mothers can fulfill this most important public task. The arrangement known as "mothers' pensions" has made such a wide appeal that it was considered by fifteen state legislatures in 1913. There are already nine states which have adopted this way of safeguarding their children until the time when a universal compulsory insurance system, such as is in successful operation in Germany, will secure for each industrious family an unbroken circle.

MRS. ROSS.—Is the mothers' pension system really working out well where it is in operation? I have heard rather contradictory reports about it.

MISS PARSONS.—No one claims that the results have thus far been ideal. They cannot be so until an ideal system of administration has been evolved and that may not be for years. Any pension scheme whose operation is dependent on the discretion of officials is open to abuse; but present imperfections of method do not in the least impair the soundness of the theory upon which mothers' pensions are based.

DR. LATTA.—It is not, of course, the purpose of this evening's discussion to weigh the relative advantages of home and institutional care of children. The question,

indeed, admits of no discussion. We have a reason, however, for emphasizing incidentally the desirability of avoiding institutional care for children whenever possible. Just now a strong sentiment is springing up in our town in favor of enlarging the capacity of our county orphanage. Such a step is both unnecessary and undesirable. It is true that there are children who now need its protection and for whom there is at present no room, but how many children do you suppose there are among the two hundred already there who would not be better off if placed in private homes? Not more than five. If it is desirable to continue the orphanage at all, let us make it primarily a receiving station, from which the children can either easily return to their own homes when conditions are improved there, or to other homes or special institutions better fitted for them.

MRS. ROSS.—Among the advantages of the private home do you include conditions more favorable to health?

DR. LATTA.—Most decidedly. For children less than six years old experience has shown up to the present time that, without a single exception, institutional care is the most deadly kind of care. There is to-day an orphan asylum in Philadelphia in which the mortality of babies under one year old is about 100 per cent.

MISS PARSONS.—I see that the Child Helping Department of the Russell Sage Foundation has recently made a study of the sanitation of foundling asylums, and has brought out a set of plans for such institutions which call for extraordinary sanitary precautions.

DR. LATTA.—This study will doubtless prove highly valuable when the results are widely known and acted upon. In the meantime babies should be kept out of institutions.

After the first tender years, children resist the strain and limitations of institutional existence rather better, and in the most enlightened institutions survive the ills of childhood as safely as in ordinary family life, possibly more so. It is only one institution in a thousand, however, that can make such a claim. The New York Orphanage at Hastings-on-Hudson and the Seybert Institution for Children at Meadowbrook, Pa., are such institutions. They are remarkable examples of what ideal physical conditions, wise direction, and abundant funds can do for the health of institutional children. In referring to the scarcity of contagious disease in his institution, the superintendent of the New York Orphanage, Mr. Rudolph R. Reeder, said, toward the close of January, 1913: "This is our eleventh winter in this Home and the hospital has been closed eight of these winters including the present. This means that during the eleven years we have lived here 200 children have passed through eight winters without any of the forms of contagious sickness requiring hospital treatment."

The Seybert Children's Village, which accommodates 100 children, has also been highly successful in holding off contagious disease. Among the 650 children admitted during the six years of its existence the number of cases of serious contagious disease, with the exception of whooping-cough, stands at the following surprisingly low figures:

Measles	24
Chicken Pox	15
Diphtheria	1

The whooping-cough which invaded the institution during one winter we will refer to later.

The very success of the institutions just named is in

itself an argument for closing the doors of many others. Without the ample income, the wholesome country location, and the exceptionally wise management which these two orphanages enjoy, the average institution stands no chance of even approaching their standards of efficiency. Listless, undergrown children, with little strength to resist disease, and little energy to make their way, are the products of most children's institutions as now conducted. By having the children for the most part placed in private homes, much of the energy and money which are at present spent in running poorly hundreds of unnecessary institutions could be diverted to the support and conduct of a few necessary and highly efficient ones.

MR. YOUNG.—What do you regard as necessary institutions for children?

DR. LATTA.—Hospitals for the sick; asylums for defectives, such as the feeble-minded, deaf, blind, and epileptic; school homes for the delinquent; and temporary homes for normal children who are destitute and neglected. Such institutions as these society will always have to support, either through charity or taxation.

Society not only will have to support such institutions but it will have to *supervise* them, whether they be public or private. If our school children have need of public health supervision, our parentless institutional children have far greater need. Shall we allow it to be possible for long, do you think, to find, as I did a short time ago in the orphan's home to which I referred, a dormitory in which 100 boys slept and in which there were just 3 windows?

Economical no less than humane considerations make the safeguarding of the health of the children in institutions a matter of the very greatest importance.

It is, moreover, a matter presenting peculiar difficulties, as the mere bringing together of many children to live under one roof and one central management complicates highly the problem of securing the best health conditions for each. Let us now see just what the complicating factors are and how best to overcome them.

We will suppose that the health conditions which we have noted as necessary for children in families are met as they should be in a children's institution; that fresh air, good food, proper clothing, and play space are all provided in abundance. Not that this is often the case, but even when it is there are two further provisions which, though needing little consideration in private families, cannot be neglected in institutions without the gravest danger. These are (1) *precautions against contagion*; (2) *precautions against devitalizing routine*.

MR. ROSS.—The need for taking precautions against contagion is, of course, apparent where you have so many children living together. The second need I fail to appreciate. How can you care well for children and train them, too, without making the whole process one of routine?

DR. LATTA.—If you will bear with me just a moment while we discuss the subject of contagion, I think I can show you that a too rigid routine for children is as great a menace to their health and vigor as a too general distribution of germs.

CONTAGION

A children's institution affords an ideal arrangement for the spread of contagion. Day and night, at play, at work, at meals, and at rest, numbers of children are

close together with every opportunity for passing infection from one to another—unless the strictest watch is kept and the most rigid regulations enforced. The ease with which frequent and devastating epidemics can spread in institutions is shown in tragic chapters from the annals of almost every one whose history covers more than a year or two. And yet institutional conditions can be so controlled as actually to provide greater safety from contagious diseases than can possibly be secured in any ordinary well-regulated family.

MR. ROSS.—How in the world——

DR. LATTA.—Nothing easier. Contagious diseases are spread almost entirely by direct or indirect contact with those suffering from them or by contact with people, animals, or even articles that have been infected by them. If everyone who either has a contagious disease or has been exposed to one, and every article which may contain infection, is kept away from children, no contagious disease can reach them.

To exercise the vigilance necessary to secure such absolute freedom from infection is quite impossible in a normal family, for the members cannot avoid mingling with the general public among whom virulent disease germs are as yet always lurking. A children's institution, on the other hand, can easily meet the conditions necessary for excluding contagious diseases. It is in itself a little world whose entire public can be placed under the strictest scrutiny.

In addition to the care that is necessary in any community for securing a safe food and water supply and a sanitary waste disposal system, there are two measures which, if faithfully carried out, make a children's institution practically contagion-proof. These are: (1) *isolation of all entering inmates until it is demonstrated*

that they are free from contagious disease or infection of any kind; (2) immediate and complete isolation of any inmate who shows the least deviation from normal health. Institutions where these rules are strictly carried out have no epidemics. The contagion is blocked at its first appearance both without and within the fold.

1. *Isolation of Entering Inmates.*—A thorough medical examination should be promptly given to every child on entering an institution, and until he can show a clean health bill he should be detained in a receiving cottage or wing entirely apart from the other children. This simple precaution is a most effective guard to the health of the entire institution. It should be practiced inflexibly, no matter how unnecessary it may appear to be in certain cases. A perfectly well child may be a carrier of virulent disease germs. This has been demonstrated again and again when the unsuspected source of some mysterious epidemic has finally been traced to a healthy "carrier." No chances should be taken on a possible "carrier" in an institution. Risks that can be lightly taken in families are fraught with almost certain disaster in institutions. The only real safety from contagion among large numbers of children lies in the elimination of all risk.

2. *Immediate Isolation of Sick Children.*—In addition to the strict guard that must be kept against outside infection, it is further necessary that each child within the institution be under trained and watchful eyes every day. Under cottage management (the best system for providing children with personal care) it is easy for the house mother to observe promptly any untoward symptoms that may appear among her children.

The child who is affected should be instantly with-

drawn from the group and placed either in an isolated room in his own cottage or in the institution infirmary until the nature of his sickness is determined. Such prompt care is no less desirable for the child himself than for the others who might be infected by him. Many a serious illness can be checked if promptly recognized and correctly treated. Constant scrutiny of the children and immediate isolation and care of the sick are the first duties of the house mother who would avoid trouble.

MRS. ROSS.—May I ask whether an ordinary cold should warrant the isolation of a child.

DR. LATTA.—A child just coming down with a cold should always be isolated, as he may be exhibiting the first symptoms of a serious contagious disease, particularly measles or whooping-cough. A cold itself, as you know, is very contagious and every case should be kept isolated, if possible, until the acute stage has passed. Mothers who find this an irksome requirement, often experience the alternative of having all their children instead of one, ill with colds. When children with colds cannot be completely isolated, every reasonable care should be taken to prevent them from passing their germs around. They should always be carefully trained in the use of individual toilet articles, handkerchiefs, towels, tooth brushes, and combs, and in the practice of considerate hygienic habits, such as turning away from people and covering their noses and mouths when sneezing or coughing.

The most successful way to avoid colds among children is to develop their own powers of resistance through plenty of good food, fresh air, and exercise. Germs gain little foothold among children who enjoy such a régime. In the Children's Village of the Seybert In-

stitution no attempt is made to isolate children with colds. The constitutional tone of the children is so good, however, that the rare cases of cold which occur there do not multiply.

When a contagious disease does crop out under the guise of a cold, however, it spreads rapidly among children of even such high resisting power as those in the Children's Village. The one real epidemic that has visited this institution was due to whooping-cough, which attacked about one-third of the whole population in a single winter. It is possible that a general policy of putting a strict quarantine on every child who showed the first symptom of cold or cough would have prevented this epidemic. Not having observed the conditions in the Village at the time, however, I offer this suggestion not as a criticism but as a query.

ROUTINE

The deadly effect of institutional routine manifests itself in two distinct ways, on the body and on the mind. Many children cannot endure an unyielding daily schedule which includes fixed diet and dress, hours of obligatory study and work, and their health suffers accordingly. As we have learned in our earlier discussions, a child's daily routine, including what he eats and wears, should be devised especially for him. To make inflexible arrangements for a miscellaneous group of children is like providing each with a coat of one size. Some are not covered while others are swallowed up. The requirements of an institution should never become so fixed that the daily program cannot easily be modified to suit the needs of individual children, nor should the supervision be so scanty that children who need special

attention can fail of detection on the part of those in charge.

In the so-called congregate form of institution, unless the number of children is very small, fifty being the maximum, it is impossible to give the necessary attention to individual needs that can be given under a well-conducted cottage system; nor is it even possible to introduce changes which the whole group may greatly need when every detail in the machinery is run according to directions issued months in advance, as is often the case.

Direct Physical Effect.—Not the least of the difficulties in adapting institutional conditions to the needs of children lies in the inflexible dietary which has to move in the line of least resistance when large numbers are to be fed. The wholesome exhilaration that children experience, for instance, in securing some specially longed-for table treat is an unknown delight to those who are fed on the congregate plan, and whose meals are often served according to a prescribed weekly schedule made out with little respect to changing seasons and markets or the seasonal cravings of children.

MISS PARSONS.—In citing the greater freedom in diet which is possible under the cottage system, Mr. Reeder tells of a group of boys who begged the cook to make pancakes for breakfast. "When she protested that making pancakes for twenty-five boys was beyond her capacity, they gladly took the responsibility upon themselves, and a great feast of pancakes was spread the next morning. That was but the beginning of innumerable forms of catering to their taste now going on every day in the various cottages."

MR. ROSS.—Isn't there danger of tempering the wind too much for those dependent children? The world,

when they get out into it, won't give them pancakes just because they want them.

DR. LATTA.—But they will be the better able to secure their own pancakes for having had them in their youth. A growing child derives much of his joy and all of his energy through the satisfaction of his active stomach. Dependent, defective, or delinquent though he be, his need for enjoying food is as great as it is with our own Tom or Harry.

The desirability of giving even orphan children meals that they enjoy was suddenly brought home to the New York Orphan Asylum a few years ago, when it was found that more than half of the children were under standard height and weight. The management immediately set about making their meals attractive. Surprises and relishes that were nourishing were placed on the diet. Muffins and appetizing soups, smoked and salt fish of various kinds, fruit sauces, and alluring desserts were introduced, to the great delight of the children.

This vigorous diet reform brought about an instant and startling result. Beginning at once, the proportion of children above standard weight and height increased rapidly until in two years, instead of being only half of the number below, it had come fully up to standard. As no change in the environment other than the improvement in diet was made during this time, the change in the children can very safely be attributed to this factor.

I have cited the matter of food as merely one of the items of the physical environment which should be constantly adapted to the changing needs and legitimate desires of the children. There are many others. The weight and even style of clothing, the hours of sleep or

rest, the violence of play, the amount of work—all these details should be carefully adjusted to the requirements, capacities, and even the tastes of the individual children.

MRS. ROSS.—In our county orphanage we have found that it facilitates individual adjustments to have children of widely different ages in the same cottage. The needs of these children are so various that it is quite necessary to arrange for them individually.

MR. YOUNG.—This arrangement has the additional value of providing a greater variety of interests for the children. Each year of life has interests of its own, and little children, as well as older ones, can share each other's experiences with mutual profit.

DR. LATTA.—Mr. Young's point suggests the effect that an overemphasized or monotonous routine has upon the mind and indirectly upon health.

Mental Effect.—Through its paralyzing effect on the spirit and will, a too mechanical régime lowers the whole nervous tone of the children and the energy of all their vital functions. This effect, though brought about through a mental state, shows itself in stunted growth and poor accomplishments, just as palpably as if caused by insufficient food or air. The digestion of children, for instance, in institutions which enjoin complete silence during meals—and there are many of these—cannot be as sound as that of children who are allowed a moderate degree of conversation and merriment while eating. Life means literally nothing either to adults or to children unless it permits of some independence of action, whether of work or play, some freedom to chase rainbows, some chance to convert hopes into realities. If the opportunity for such initiative is denied the central dynamo is checked and all the forces of growth with it.

MRS. ROSS.—In the most progressive institutions, children are permitted much variation in their dress. The institutional uniform is recognized as destructive both to taste and self-respect. No emblem could mark more emphatically the humiliation and hopelessness of the average orphan's plight than the shapeless, monotonous garments that proclaim their wearers the inmates of certain institutions. Even when economies must be sharply made, it is possible to grant a little latitude in dress. Merely a collar or a ribbon of a small girl's own choosing is a source of joy and inspiration to her.

MR. ROSS.—Are there any actual statistics that show the harmful effects of routine or the favorable effects of freedom on the physiques of children?

DR. LATTA.—It would seem a rather odd experiment to try to state the effect of hope and joy and independence in terms of pounds and inches. As far as I know, there has been no attempt to make quite so bald a demonstration. I have some figures here, however, which are very suggestive. The children in the New York Asylum whose growth we have just seen to have been remarkably advanced by an improvement in their diet showed as much gain again when they were moved into the country and suddenly freed from countless restraints which had been necessary in their city home. During seven years, which included two years of city residence and five years of country life, the children showed the following variations from normal standard in weight and height:

	1900	1901	1902	1903	1904	1905	1906
No. above standard average in both weight and height....	39	52	67	66	80	78	72
No. below standard average in both weight and height..	87	66	67	62	49	54	55

The first measurements in 1900 to which we have already referred showed the number of children below standard weight and height to be more than twice as great as the number above. The effect of the vigorous diet reform is plainly indicated in the figures for 1901 and 1902. In 1902 the institution was moved to the country and the congregate form of housing replaced by the cottage system. A much freer life was now possible for the children. Opportunities for play were greatly broadened, and many restraining rules that had been necessary in the confined city quarters were lifted. The improvement in the children following this change was as pronounced as their improvement following the change of diet. This time the number of children above standard, instead of remaining equal to the number below, within two years exceeded by over 50 per cent. the number of children below standard.

MISS PARSONS.—Do you attribute this remarkable improvement largely to the new freedom from restraint?

DR. LATTA.—Very largely. The freer, more home-like atmosphere of cottage life, the wide range of country open for the children's work and play, the opportunity to cultivate individual gardens, to build play houses, to swim in the river, to climb trees, and roam in the woods—all these enlarged privileges, while benefiting the children directly by securing for them better care, fresh air, and exercise than they had ever known before, were most dearly prized and, therefore, most stimulating to health on account of the coveted freedom which they involved.

MR. YOUNG.—Let us take a moment now in closing to sum up the important principles which have been brought out in this evening's discussion.

The problem of rearing children in institutions has



EVERY HOUSE A HOME.

Where is the institution? The varied architecture and moderate size of the buildings in the Seybert Children's Village, Meadowbrook, Pa., illustrate the growing emphasis upon home life for small groups in institutions for children. The group of children around the Christmas tree shows the individuality in dress, the variety in age, and the approach to normal family life which are important factors in the management of the New York Orphanage at Hastings-on-Hudson.



1. The first part of the document is a list of the names of the persons who have been named in the proceedings.

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evidently two very definite aspects, the *physical* and the *psychical*. The physical environment should be maintained according to modern scientific standards, which include the items of suitable food, air, and play space, and also the important matter of excluding and checking contagious diseases. The right psychical environment is no less important. Children in institutions need both more freedom and more attention than they are wont to receive.

Nature has arranged that her human young shall be brooded over in small numbers for many years by the most watchful and at the same time the most indulgent care that life in any of its phases has evolved. Hired supervision of larger numbers of children than are natural to a family can never even approximate in efficiency the loving care that is bestowed by a mother on her own. All the more important is it, then, to make the fullest possible efforts to individualize institutional children and to satisfy their wholesome personal cravings as any mother would.

SUGGESTED READING

HART. *Preventive Treatment of Neglected Children.*

REEDER. *How Two Hundred Children Live and Learn.*

RUSSELL SAGE FOUNDATION.

Cottage and Congregate Institutions.

Receiving Home for Foundlings and for Mothers with Their Babies.

SMEDLEY. *Institution Recipes.*

XIX

THE RELATIVE COST OF HEALTH AND DISEASE

MR. YOUNG.—Every health reform which we have discussed this year has promptly been challenged by the query, "What will it cost?" The question is not out of place. If health costs more than disease, it is evidently economy to choose disease.

MISS PARSONS.—But what is economy for? What value has it if its price is human health or life? If a community must scrimp on its health, what reason has it for existing?

MR. YOUNG.—None whatever, it seems to me; and yet our taxpayers do not all share this reasonable view. Some of them are grumbling at the increased expense which our new system of medical inspection has added to the schools. Many are opposing the erection of a sorely needed filter plant. Others are scoffing at what they term the extravagance of our proposed plan for milk inspection. Nothing but proof that these new outlays will pay a money profit will convince such people that they are worth while. Can we furnish them with the proof? Mr. Ross, who has consistently kept us from being carried away by sentiment this year, will present us with some facts concerning the relative cost of health and disease.

MR. ROSS.—I trust my report to-night will square me for the various ill-considered objections I have made

during the year to the policies suggested by Dr. Latta, Miss Parsons, and the others for improving the health of our school children. My criticisms must be laid to an incomplete knowledge of the facts, for, with new information, I am ready to testify to the wisdom, as well as the economy, of every plan that has been seriously worked out in this club.

The ancient truth that an ounce of prevention is worth a pound of cure has finally reached me. Calculated in dollars and cents I have found that the relative cost of disease and health really exceeds the ratio of 16 to 1. The evidence stares us in the face on every side. For any one who doubts, the amazing record made in Panama alone is a final answer. When France, in 1889, abandoned her tragic effort of eight years to build a 15-foot canal down there, she left the country full of dead men and brought home with her a deficit of over \$300,000,000. An equal outlay of money on the part of the United States is now bringing a 40-foot canal to completion with an ease and swiftness which are amazing the world.

Scientific management may justly claim credit for the speed and economy with which the work is being carried out. To modern sanitation, however, which is the art of preventing disease, belongs the credit of making the undertaking possible at all. If the pestilences which mowed down the workers faster than they could be brought to Panama had not been checked, the canal could never have been completed. To hold off these diseases has cost something. Money has been poured out in Panama as nowhere else in the world, merely to save the health of the laborers, six-sevenths of whom are ignorant blacks. In spite of the ignorance and carelessness of the mass of the population, the death rate

has gone down and down, finally, in March, 1911, reaching the unexampled level of 8.91 per 1,000, which is almost 50 per cent. lower than the average death rate in the United States of 16½ per 1,000. At one time, under French control, the mortality in Panama reached the incredible figure of 170 per 1,000.

The motives which have prompted our outlays for health conservation in Panama have not been humanitarian. They have been strictly economic and in that very fact lies their tremendous importance. It is only a paying policy that society in the long run can hold to. Now, if it is profitable to pay whatever it costs to maintain health in pestilential Panama, what profit may we not expect from a similar course in our own country, most of which is already blessed with a naturally healthful climate and soil? To maintain as low a death rate in the United States as has been reached in Panama would cost us far less here than there, but still we are paying the costlier toll of preventable disease and death.

MR. YOUNG.—How much does it cost to keep well in Panama?

MR. ROSS.—Three and four-tenths cents a day per man. This includes not only sanitation but medical and hospital treatment. The sanitation alone costs only nine mills per day.

MR. YOUNG.—This seems a surprisingly small outlay for the miracle that has been wrought in that notorious pest-hole.

MR. ROSS.—It surely does; and yet, if the people of the United States were to spend their public money on their own health at the same rate that they do on the health of their ditch diggers in Panama, they would spend \$1,100,000,000 a year—more than Congress has ever appropriated for all other national purposes combined.

MR. MARTIN.—Mr. Ross's total looks pretty large, however innocent the rate per man per day appears. Would not the Panama rate applied in this country put the nation out of business? We can stand the extravagance of keeping well a handful of 35,000 people in Panama for a short time, but a proportionate health bill for each of our 90,000,000 people—would it not be ruinous?

MR. ROSS.—A nation that can spend \$1,500,000,000 on its tobacco ought to be able to meet a health bill of \$1,100,000,000. Indeed if this amount, enormous as it is, were necessary to save us from our preventable diseases, we should actually make a profit on the outlay. By the most conservative estimates, the annual loss to our citizens through preventable diseases and death is \$1,500,000,000.* That amounts to \$29,000,000 more than the sum in question, and, incidentally, to about one hundred times as much as Congress has ever appropriated for the protection and promotion of public health. In 1911 the federal government spent a little less than \$15,000,000 for this purpose; and considerably more than half of this went for maintaining health in the army and navy alone. It took almost \$9,000,000 to guard the health of 150,000 soldiers and sailors, which left less than \$6,000,000 for promoting the health of our remaining ninety million citizens.†

MR. MARTIN.—Aren't the states and counties and municipalities supposed to look largely after the health of their own citizens? The federal government can't do everything.

MR. ROSS.—To be sure. The states and cities are

* Fisher. *Report on National Vitality*.

† *The Need for a National Budget*. House of Rep. 62 Congress, Doc. No. 854.

spending more or less—principally less—for health conservation; but in spite of that the entire expenditure—federal, state, county, municipal—falls enormously short of our need.

MR. MARTIN.—What is the extent of our need?

MR. ROSS.—That cannot be exactly estimated with our present information; but it is safe to say that it would fall well under the requirement in Panama. The chief expense in Panama is for protection against tropical infections, from which a great part of our country is free. Relieved of that great initial expense, we have it in our power here, at far less expense than has been incurred in Panama, to lower the death rate and extend the span of human life beyond any points which have yet been reached in any country. Let me show how this can be done by citing a few results that have already been accomplished, both in disease prevention and the postponement of death by an enforcement of scientific treatment for disease.

The control and prevention of the world plagues furnish overwhelming evidence of the economy of the general policy of prevention. Before vaccination against smallpox was introduced, 95 people out of every 100 took the disease, and the disease took a greater share of the population than any other cause of death. A community even now occasionally gets a taste of how it was in the good old days before medical freedom was so curtailed as to require reluctant citizens to undergo the vaccination ordeal. In Philadelphia, in 1891-2, laxity in the prevention of smallpox gave a start to an epidemic which cost the city between twenty-one and twenty-two million dollars. The outbreak could have been prevented entirely by vaccinating all the citizens, and while this was being done, establishing a well-equipped disin-

fecting station, and instructing the public fully in methods of preventing the disease from spreading. The cost of these measures would have been under \$750,000, as opposed to the net loss of \$21,000,000 which the city suffered.

MR. MARTIN.—How was the amount of loss figured out?

MR. ROSS.—A careful estimate was made of the expenses from sickness and burial, loss of time from employment, and loss to business and transportation companies due to the epidemic.

DR. LATTA.—We need not go so far back as 1891 for a smallpox lesson. Pennsylvania gave us another in the summer of 1912. An epidemic broke out in several towns and cities, and was checked only by prompt and wholesale vaccinations in which the state department of health took a hand.

MR. ROSS.—For a most complete demonstration of smallpox prevention we must turn from our own enlightened land to the Philippines. The health measures that have been carried out over there have added one of the most brilliant chapters to the history of disease prevention in the world. In seven provinces around Manila the number of cases of smallpox formerly averaged annually 25,000 to 30,000, of which 6,000 were fatal. In the year following the vaccination of the entire population of these provinces, there was not a single death from smallpox. In fact, no case of smallpox has ever developed anywhere in the Philippines or anywhere else in the world in an individual who has had a successful vaccination; that is, one that has "taken" within a year. The money cost of preventing smallpox by vaccination is so small as to be altogether negligible in comparison with the cost of the disease.

MR. YOUNG.—Is not the cost of vaccination in health and even life rather heavy, however?

MR. ROSS.—We hear tales of horror told about infection from vaccination, but such calamities, which now are extremely rare, must be laid to the charge of incompetent laboratory workers or physicians. In the Philippines, under skilful government supervision, not one person out of the 5,000,000 who have been vaccinated was ever authoritatively found to have died as a result.

Yellow fever is another costly scourge which has been removed from our country at a comparatively small outlay. An epidemic of this disease in 1878 cost our Southern cities \$100,000,000. Since 1898 yellow fever has been under control, and the annual saving from that time on, General Leonard Wood declares, has been a sum greater than the entire cost of the Cuban war, which was responsible for the investigation of the disease.

Asiatic cholera and bubonic plague, the most terrible scourges that ever visit mankind, still take their millions, but not from us. An epidemic of cholera in Japan in 1886 cost that country 100,000 lives, the money loss being not less than \$200,000,000. The same disease in 1892 took 8,000 lives in the German city of Hamburg, and cost the city \$25,000,000. Bubonic plague never fails to take its annual toll in the Far East; from time to time breaking into violent activity and stretching out its black hand for a hundred thousand or more victims.

That such conditions do not exist in all parts of our country to-day is due to the effective vigilance of our Public Health and Marine Hospital Service, which has developed some forms of epidemic prevention to a very perfect degree. The country has at times had its touch of all the plagues. Cholera was with us 75 years ago,

and left a hideous trail. Bubonic plague gained entrance to the Pacific Coast in 1899, and after smoldering eight years, broke out afresh in 1907, and speedily began to spread over California. With an outlay of \$250,000 and some state aid, the Federal Government checked for the time what threatened to be the most deadly invasion a nation could possibly suffer.

Typhoid fever, another genuine plague, has always been the most formidable enemy in every war. As late as 1898, in the Cuban war, it caused 86.24 per cent. of all the deaths in the army; there being 20,738 cases with 1,580 deaths among 108,000 men. Since then the terror of typhoid in war has been completely abolished by typhoid vaccination, which results in immunity as un-failing as that from smallpox vaccination.

In the mobilization of our troops on the Mexican border, in 1911, the soldiers were inoculated against typhoid fever, with the result that not one case of typhoid was reported from among the entire body of soldiers. Without vaccination our troops in Texas would almost certainly have repeated the experience of the Cuban war, in which case they would have contracted over 4,000 cases, 300 of them fatal.

DR. LATTA.—Recent figures give further force to this Texas experience. Up to September, 1912, not one death from typhoid fever has taken place in the entire army among the men inoculated with typhoid vaccine, and only eighteen cases have developed during four years among the sixty or seventy thousand men who have been immunized in that time. The navy record gives similar evidence. Since typhoid vaccination was enforced early in 1912, not one of the 64,000 enlisted men has contracted the disease and at the same time the number of cases of intestinal diseases has greatly diminished.

Mr. Ross.—The prevention of typhoid in the country at large has been demonstrated to lie almost entirely in the sanitary regulation of the water and milk supply. One city after another has learned its costly lesson, installing a million-dollar filter plant after a one or two million dollar epidemic, and instituting an inspection of its milk supply after some fatal experience with an unwatched and infected dairy. The effect of purifying a polluted water supply can be calculated with amazing precision; the result on the average being a reduction of the typhoid death rate from 62 to 17 per 100,000. In Munich the change to wholesome water lowered the typhoid mortality 97 per cent. In Lawrence, Massachusetts, the introduction of a public water filter brought it down 80 per cent.

Instances of this kind can be multiplied indefinitely, and yet our country, as a whole, is still typhoid-ridden; the disease ranking fourth in our mortality lists in the census year 1910, and claiming annually over 30 deaths, per 100,000, as against 7.6 in Germany and 6.2 deaths in Scotland. The number of preventable deaths from typhoid in the United States every year averages 30,000, the number of preventable cases 300,000, and the amount of preventable money loss \$150,000,000.

It has been carefully estimated that the cost of preventable typhoid for ten years would provide a safe and permanent water supply and inspection system for every community in the country. The economy that would be effected by making such a provision would be enhanced several fold from the fact that for each life saved from typhoid two or three lives would be saved from other diseases.

MR. MARTIN.—How is that?

DR. LATTA.—When we rid our water and milk and

the rest of our food of typhoid germs, we rid them of most other disease germs. Various intestinal diseases and often contagious diseases, as well, are prevented by a purification of the food and water supply.

MISS PARSONS.—A very effective method of impressing communities with the economic value of suppressing typhoid is to sue them for damages when the disease has been caused through their neglect. A most important decision on such a case was handed down by the Supreme Court of Minnesota not long ago. The court ruled that a town is legally responsible for the death of any person from typhoid which can be traced to the negligence of the town with respect to its water supply.

MR. ROSS.—The country would soon be rid of typhoid if all the courts were to follow the excellent example of this Minnesota court. To continue now with a few more instances of successful war on disease, diphtheria is another scourge which formerly was the terror of parents, sometimes taking the life of every child in a family. There was no protection against its approach and no measure for checking its course after the attack. Antitoxin has now robbed it of its terror and, moreover, furnished a means for preventing its spread. A careful estimate of the money saving to the country from the control of diphtheria through antitoxin, places the annual amount not far from \$100,000,000. The saving in money, great as it is, seems insignificant compared with the saving from grief and family desolation which the disease formerly caused; but to-night we are discussing dollars, and we will not dwell on the emotional side of death and disease.

There are many other diseases whose expensive ravages have been checked by scientific prevention and treatment—malaria, meningitis, tetanus, hook worm, and

all the forms of blood infection which were the inevitable result of wounds and surgical operations before the days of aseptic surgery. I shall take the time to mention only one more disease whose partial prevention has already saved us much, and whose extinction would save us more than the extinction of all the other diseases put together.

Tuberculosis is still the greatest single man-killer in the world, being responsible for 10 to 11 per cent. of all deaths the world over, notwithstanding the fact that, since 1850, preventive measures have lowered the death rate from tuberculosis 40 per cent. This disease, which constantly claims 1,000,000 sufferers in the United States, costs us \$1,235,000,000 a year, according to Professor Fisher, and it is gradually becoming plain to us that to spend a few million dollars a year in suppressing it is no extravagance. In fact, the year 1912 set a new record for expenditure in fighting the white plague. The total outlay was \$19,000,000, of which \$12,000,000 was public money.

A few progressive states are venturing to spend very liberally for the purpose of checking tuberculosis, and they are making a handsome profit on their expenditures. New York State alone in 1912 spent over \$5,000,000. In 1907, Pennsylvania made a half-million-dollar annual appropriation, and in 1909 increased it to a million. She immediately reaped the benefit, her death rate from tuberculosis falling in four years from 134 to 120 per 100,000. That means a saving to the state of 1,000 lives a year and \$1,600,000 in money, the net profit being \$600,000. Connecticut is also discovering the financial advantage of saving her consumptives. Let me quote from Prof. Irving Fisher:

In speaking of the state sanatorium he says, "The

\$200,000 expended in this work has resulted in restoring so much working power that already those discharged from the institution have earned \$300,000. Figuring on this basis, the discharged patients will in three years earn nearly \$2,000,000, thereby paying the community 900 per cent. on the \$200,000 invested."

DR. LATTA.—While it is true that the sanatoria in Pennsylvania and Connecticut, and other states as well, are yielding fine returns on the money invested, not only in restoring health to tuberculosis victims but in preventing advanced cases from infecting other people, I should like to suggest that merely segregating and treating tuberculous patients is never going to put a stop to the disease. Look at the annual production of tuberculous cases that is still going on by reason of poor living conditions and overwork! Tuberculosis is a social disease as fundamentally as are the diseases of vice which usually go under that name. To exterminate it requires not so much a direct outlay of money on the disease as a far-reaching *redistribution* of money by which the world's workers will be able to buy for themselves and their children as much sunlight, fresh air, nourishing food, recreation, and rest as they need in order to keep well. Do you know the secret of the Panama canal zone as a health resort? Next to destroying the mosquito, the main procedure has been to provide the workers with sanitary houses, nourishing, tempting, and abundant food, and plenty of opportunity to play games in the open air. If our people in the United States could live under such wholesome conditions as are now being provided for the Panama laborers, our tuberculosis incubus would be lifted in less than a generation. If our general health is good most of us can handle a few tuberculosis germs without harm. Every one of us is probably carry-

ing a few of these germs about with him at this moment; but owing either to a lowered virulence of these particular germs, or to a specially strong resistance on our part, we are not really infected, or else so mildly infected as not materialy to affect our general health. It is only when our bodily resistance is lowered, through fatigue, poor food, or bad air, that the germs become active. They can't do much to vigorous persons.

MR. MARTIN.—While we are giving the smoke a chance to settle after Dr. Latta's astonishing statements, I should like to ask how all this cost of disease and death is figured out. How is it possible to calculate the value of a man's life in money? Mr. Ross's figures have all been most edifying, but I don't quite understand them. We must all die some time. The community can't keep us indefinitely. Why does it cost more to lose us to-day than to-morrow?

MR. ROSS.—Because we go without doing to-day's work. A man in his prime is a double loss because his labor enriches not only himself but others. A child has an economic value, too, on account of his future earning capacity and the amount already invested in his nurture and education. It is only those decrepit with age, or the really idle, who can be spared without an actual money loss to society. The life values have been worked out carefully by experts. A child under five years averages \$1,500 in money value; a youth from fifteen to twenty years, \$3,000; and a person from twenty to thirty-five years old, \$7,500. After thirty-five the money value of an individual diminishes gradually until, at sixty-five, it once more reaches that of the five-year-old child.

MR. MARTIN.—May I ask how Professor Fisher's astounding figures regarding tuberculosis are reached?

MR. ROSS.—Professor Fisher bases his estimates on the loss of wages of the sick, the cost of treatment, and the capitalization of the earnings cut off by death.

MR. YOUNG.—I have seen his estimates discounted about one-third because he fails to subtract the future cost of support for those whose future earnings he computes. Is the objection valid?

MR. ROSS.—The objection is far from valid. It is founded upon a curious fallacy which discriminates against the dead man as having been useful to society merely to the extent to which he contributed money to the support of others. Certainly if he added to the wealth of society by supporting others, so did he by supporting himself. The work he did in the world, whether for his own living or his family's, was all valuable; otherwise he would not have been paid for it. Moreover, the farmer and the grocer and all the rest who profited by his purchases made their profit regardless of whether he himself or his children consumed the goods.

MISS PARSONS.—I should like to quote Prof. Patten on this point. He says: "It is moderate to assert that a family which earns \$500 a year for itself will add an equal sum to the classes above it. Sickness, death, or loss of employment means spiritual and physical misery in a laborer's family, as well as loss of income to the other classes." With respect to where the chief burden should fall, Professor Patten adds: "The family disrupted by such disasters cannot bear the cost of preventing them. Only the classes whose incomes enlarge proportionately with the growth of population can or ought to pay the costs. Surely, if society is richer by \$500, through the activity of a family, it is not too much to say that one-tenth of the sum should be spent to

keep it in good health. One-tenth is not high replacement cost for fixed capital; cannot society pay as much to replace one generation with another, which shall surpass it in body and mind as the new tool and building surpass the old in excellence?" *

MR. ROSS.—The whole question of estimating the cost of sickness and death, and placing the burden at the proper point, opens up a series of most interesting economic considerations, which we have no time this evening to follow, but for the present we are not likely to be led astray in accepting the estimates of such trustworthy scholars as Professor Patten and Professor Fisher, the latter being our leading authority on all that relates to the economics of disease prevention.

Let us see now in what direction this evening's discussion has been pointing, and what bearing it has on our school children's health. As we have reviewed the various recent victories over disease, we have been powerfully impressed with one central fact, the amazing economy which lies in the policy of disease prevention. The cases we have cited applied to but a fraction of the diseases and ailments which afflict mankind, but even these few examples have left us in no doubt as to the inestimable saving to the human race in wealth, strength, comfort, and happiness which every step in the attainment of health insures. The particular conquests of disease which we have mentioned merely indicate what may further be accomplished by applying to the numerous but neglected, every-day diseases such scientific methods of prevention as have already been applied to the melodramatic diseases, such as smallpox and plague. Whooping-cough kills 10,000 children a year in our country—far more than smallpox does, and injures all

* *The New Basis of Civilization.*

who have it. Measles takes the lives of 13,000 children—more than die of any other infectious disease. Pneumonia is fatal to almost as many as tuberculosis, but no pneumonia crusade has as yet been organized. Summer complaint takes such a harvest of babies each year that were this disease accounted contagious we should be thrown into a worse panic over the number of its victims than we are over occasional small outbreaks of infantile paralysis or meningitis.

Evidently the science of disease prevention has not more than made a start. Its chief victories, great as they have been, have, in the main, been limited to those scored through the study and the subjection of disease germs. Though there is still much more brilliant work of this sort waiting to be done, microbe hunting, the experts tell me, is not the final means by which to complete the conquest of disease.

The microbe is being withdrawn from the spotlight in favor of the human constitution, on which the health conservationists are already centering their attention. The institution most favorable for their efforts is the school, and it seems, therefore, beyond a doubt that the next great chapter in the history of health conservation is to be written in our schools. In the details of school health work I confess to be out of my depth. I have accordingly asked Dr. Latta to show us how it pays to spend public money on the health of school children.

DR. LATTA.—It is not possible to quote such overwhelming figures in connection with the health supervision of school children as have been brought forward in Mr. Ross's report, for our fight in the schools, as Mr. Ross intimated, is not chiefly against decimating diseases. It is rather against the low state of vitality so common among school children, which is due to early preventable

illnesses, removable physical defects, and unwholesome environment, and which makes children easy victims to innumerable diseases. To build up the vigor of children is our chief aim in the schools. Most of the virulent contagious diseases are already under control, but there are a score of diseases, both infectious and non-infectious, against which there is as yet but one known protection. This protection lies in the high resisting power of a robust constitution, which can be secured only by means of wholesome living conditions. Tuberculosis and pneumonia germs and most other disease germs can make little headway in a body which is free from chronic defects and which enjoys the protection of good air, good food, proper exercise, and sufficient rest.

It is such immunity, derived from carefully developed strong constitutions, the most reliable and lasting of all immunities, that we must secure for the growing generation; and it is through the schools, both public and private, that we can best go about securing it. No health crusade that has ever been undertaken can vie in results with what may be done for our national health through this means. In the schools the health and development of all the people can, for a period of at least seven years, be made subject to scientific control; and the education indispensable for sanitary living acquired. It is also through the schools that the parents can best be reached and instructed in matters of health.

To raise the question whether such health supervision and health training are paying propositions is like asking whether it pays Holland to keep her dikes in repair. The material profit that results in transforming an anemic child into a robust one may not appear at all in the financial report of the school board, but it is none the less evident that the community will eventually be

the richer for having a healthy, well-educated man or woman instead of an invalid on its hands, or possibly a premature tenant in the cemetery.

MISS PARSONS.—Theodore Roosevelt, whose vitality and endurance are the wonder of three continents to-day, was a child so frail that it seemed doubtful whether he would live long enough to enter upon any career of usefulness. Attendance at the schools of his boyhood proved out of the question for him, and had not his parents wisely concluded that the course for his best development lay in his following his own healthful outdoor instincts, it is highly probable that his name would never have appeared among those of the world's great men.

DR. LATTI.—Most parents lack the wisdom or the means to meet the special needs of a frail child as the Roosevelt parents did, and it is only through the active coöperation of the school that such needs can ordinarily be met. The cost of such school coöperation is low, absurdly low, compared with the amounts we spend in filling children's heads with curious forms of arithmetic and exceptions to rules of grammar. It would take but a slight improvement in the physical welfare of school children to justify the very moderate expense which even our most liberal systems of health supervision entail. In this connection let me quote from a report by Dr. Josephine Baker, Director of Child Hygiene in New York City:

"This work in the schools with its control of the contagious disease situation, with the elimination of the school as the main focus of infection; the physical examination of each child as soon as it enters school, before it is allowed to graduate, and as nearly as possible every two years in the interim, the instruction of the parents in the character of defects found,

and in the necessity for treatment, and the follow-up work necessary to induce parents to provide treatment or to record their absolute refusal to do so, was performed during 1911 at a per capita cost of 43 cents. During this same year the per capita cost of the year's schooling in the public schools of New York City was \$43.90."

Though the amount that New York spent on the health of her school children was but 1 per cent. of what she spent for their "schooling," her outlay was more lavish than that of any other American city except Montclair, New Jersey, which, for progressive attainments, is in a class by itself.

It is not necessary to take on faith all the profit that lies in the health supervision of school children. New York has already made a substantial showing of gains in health and school attendance as the result of her energetic system. To quote again from Dr. Baker:

"The necessary exclusions of children suffering from contagious eye and skin diseases have been reduced from 57,000 in 1903 to slightly over 3,000 in 1911. * * * There has been a definite decrease in the percentage of the number of individual defects found each year, with the exception of defective teeth. Defective vision has decreased from 13 per cent. in 1909 to 10 per cent. in 1911; defective nasal breathing from 18 per cent. to 11 per cent., while hypertrophied tonsils show a decrease from 22 per cent. to 15 per cent. in the same space of time."

In benefiting the school children directly, both in mind and body, by reducing the number of their physical defects, and the extent of their absence from school, the division of Child Hygiene is also benefiting the schools themselves and the taxpayers, by reducing the two most potent causes of retarded progress in the schools. At an earlier meeting we quoted the figures of

the Russell Sage Foundation showing the extent to which school progress was retarded by the most commonly found physical defects. To take only one example—the adenoid children, you will remember, require one and one-tenth years more schooling to complete eight grades than children without defects. Dr. Baker's showing of a reduction from 18 per cent. to 11 per cent. of children suffering from this defect means that there are now 48,500 less adenoid children in the New York schools than there were two years ago. While we cannot assume that all of these children are completing eight grades of school work one and one-tenth years sooner than they would otherwise have done, many of them stand a very good chance of doing so. If all did, their increased efficiency would save the city the enormous sum of \$2,129,150. The actual saving that is being made is, undoubtedly, well over half this amount.

MR. MARTIN.—I don't quite see why these children should not all make normal progress if the cause of their retardation has been removed.

DR. LATTA.—Some of them doubtless have other retarding defects—notably defective teeth—still uncorrected; while others may have suffered the retarding influence of adenoids through several grades before being successfully treated. Others, yet, will drop out of school before going through the whole elementary course. In spite of these considerations, the money saving in a school system through the effective treatment, or—what is infinitely better—the prevention of physical defects, is evidently very great.

MR. ROSS.—The question of whether money is saved through such means was put to a practical test a short time ago in Hoboken, New Jersey, where it was esti-

mated that if one school nurse saved only 40 children from non-promotion she would save in money an amount equal to her entire year's salary. The school board, after observing the work of a nurse whose services had been donated to the schools for six months, was convinced that her work more than compensated for her cost and they promptly secured an appropriation for securing her continued services.

MISS PARSONS.—We have heard this evening most illuminating facts concerning the cost of disease and the saving to be accomplished by preventing it. We have also heard something, though far less, concerning the cost of health. Our scanty knowledge on this subject is doubtless due to the fact that we invest so little in health. Our yearly investments in preventable disease and death, on the other hand, are too colossal to escape our attention. We indulge ourselves annually in two hundred and twelve million dollars' worth of typhoid which an outlay of sixty-two million dollars would prevent, in spite of the fact that no one would take the disease as a gift. We fill our asylums and institutions with feeble-minded, blind, deaf-mute, delinquent, and dependent children, at a cost of many millions, never stopping to inquire how much less it might cost to prevent the birth of defective children, or to do away with the damaging environment and diseases which make normal children defective or dependent.

DR. LATTA.—In this connection let me quote an estimate recently made by a well-known health officer in an eastern city. This man estimates that an effective health service which shall watch over the health of the entire community and guard each child, from the time of his parents' marriage to his own, can be carried on at an annual per capita cost of 35 cents. The keynote of this

service would be health instruction. The direct result would be an overwhelming decrease in child mortality and sickness, and in defects resulting from tainted inheritance or early disease. The indirect results would be a proportionate decrease in delinquency, inefficiency, insanity, crime, and poverty.

MISS PARSONS.—For 35 cents a year! Our defectives needing institutional care, who alone comprise 3 to 4 per cent. of our population, lay a tax upon every member of the community of more than a dollar a year. Our people spend \$100,000,000 on them.

MR. YOUNG.—We have evidently not more than opened this most vital subject of the profit to be derived from health investments; but if only those facts which have been brought forward to-night, together with their social meaning, could be impressed upon every American citizen, as they have been impressed upon us, this country would be plunged into revolution; not a warlike revolution, to be sure, but one far more fundamental than was ever brought about by marching armies. The changes wrought would not be in our national boundaries, but in our national mind. Many of our present ideals as a nation, our purposes and methods, would have to surrender to the conquering ideal of social coöperation.

As yet the preservation of our national life through war is the dominating idea in our national councils; the dominating motive in our national expenditure. It is almost impossible to believe that the government in 1912 spent almost as much for military pensions and war preparations and consequences as for all other functions of government—legislative, executive, and civil service added together. War, past and prospective, claimed about \$425,000,000, leaving less than \$400,000,000 for

promoting the present and future economic and individual welfare of the American people.*

When we outgrow our war obsession we shall have practically unlimited means for securing the physical welfare of every citizen. Four hundred million dollars, set free, will go a long way toward loosening the strangling conditions that bind many of our industrious men and women, and an appalling number of our children. Indeed the day is already dawning when the conservation of people's health will be generally recognized as our very greatest public concern, and be provided for accordingly. Some of the billions now being sunk in coast defence and navy destroyers will be diverted for health defence and germ destroyers, returning a profit in national vitality such as never sprang from steel or gunpowder. The doctrine of protection will be applied to health as well as to industry; and the sacred phrase, the "American Constitution," will have a second meaning, no less sacred, as applied to the physical stamina of American citizens, upon which depend more fully than upon any inherited document our life, liberty, and pursuit of happiness.

SUGGESTED READING

BRUÈRE. *The New Meaning of Public Health*, Harper's Monthly, April, 1912.

FISHER. *Economic Aspect of Lengthening Human Life*.

* Message of the President of the United States submitting for the Consideration of Congress a Budget, Senate 62nd Congress, 3rd Session, Doc. No. 1113.

FISHER. *Report on National Vitality.—Its Waste and Conservation.*

MAYO. *The Problem of National Health*, The Outlook, Dec. 7, 1912.

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE.
The Public Health Movement. March, 1911.

XX

COMPULSORY HEALTH

MR. YOUNG.—In reviewing the work we have done this year for the health of our school children, we find that we have been moving steadily toward a very definite end. The reforms we have brought about, as well as those which still remain to be accomplished, are all evidently part of a program which is destined to be carried on under a public system of *compulsory health*.

MR. MARTIN.—That phrase has an ugly sound to many people. In our recent study of systems of medical inspection we found, in several cities, great hostility to the idea of public health supervision, on the ground that it interfered with the so-called sacred right of everybody to regulate his own health and that of his children in whatever way he pleased. I am informed that even in Los Angeles, which has been quoted to us as a pattern of enlightenment with respect to children's health, the advocates of individual medical rights are threatening to upset all the good public work that has been started there. I should like to hear the whole question of medical freedom and compulsory health thoroughly discussed. If there is a word that will quiet the clamorers who are obstructing health legislation, let us hear it.

MR. YOUNG.—The entire controversy resolves itself into two questions:

1. Is private health a matter of public concern?
2. If so, to what extent is the government justified in protecting it?

If the advocates of medical freedom would face these two questions fairly, it would not take them long to come to an agreement with their opponents.

DR. LATTA.—Indeed, there is already a strong tendency for opposing medical “sects” to unite for the purpose of public health conservation. A most significant step was taken in June, 1912, when the American Institute of Homeopathy withdrew its long-standing opposition to the efforts of the American Medical Association to form a federal department of health. Their old-time feud forgotten, the so-called “regulars” and the homeopaths are now working shoulder to shoulder for this great common end.

MR. YOUNG.—What reasonable man can oppose a federal bureau of health, or, in fact, any agency that will truly advance the health of citizens? To return to our first question—Is private health a matter of public concern?—no one can fail to see that the prosperity and comfort of society are altogether dependent upon the health and strength of its members, and that every individual who becomes physically incapacitated diminishes somewhat the community's total efficiency. As we saw at our last meeting, the greatest burden of sickness falls upon those who are well. The heaviest share of the loss is almost never borne by the sufferer, but by those who are deprived of support or service or trade through his sickness, or by those who are compelled to meet its cost with their own strength or incomes, whether through nursing, charitable relief, or taxation.

MISS PARSONS.—Since private sickness—and what

other kind is there?—is invariably a social calamity, private health is assuredly a matter of public concern.

DR. LATTA.—No one really disputes this. The advocates of medical freedom themselves are the last persons to object to the government's making the country a wholesome place to live in. They agree with us all that the government has no higher duty than to protect our health, whether through public sanitation or the restraint of individuals whose condition or activities are a menace to us.

MR. YOUNG.—The hitch with them does not come, then, on the principle of public health protection, but, as we indicated in our second question, on the extent to which such protection should go.

DR. LATTA.—Exactly. These individuals accept very cheerfully the health protection afforded by such public measures as the quarantine of contagious diseases, the vaccination of other people, building and plumbing regulations, sewage and garbage disposal systems, inspection of milk, and purification of city water, every one of them compulsory health measures; but the minute the government goes one step further and attempts to protect their health, not only by restraining the conduct of other people but their own as well, they raise a cry of outrage. Their own health, though it is to be fostered by public care, they declare to be a private possession to be regulated as they see fit.

If the loss of such people's health injured no one but themselves, we should not be inclined to quarrel with their view. Unfortunately, however, their children's adenoids, which they refuse to have treated or removed, are a distinct obstacle to social progress. The death of their children from diphtheria, which the use of antitoxin would have prevented, is a serious loss to the

community. Their evasion of vaccination not only means the likelihood that their usefulness to society will be crippled or extinguished by an attack of smallpox, but that they will infect others who have also disregarded the obligation of every one to coöperate, by means of vaccination, in keeping the community free from the plague. These are but a few of the many instances in which individual medical freedom is not compatible with the general good.

MR. MARTIN.—But you couldn't get the advocates of medical freedom to admit that harm comes of their practices. They hold that their methods of handling disease are as good as any, and they denounce the least interference in this matter as a violation of the right of every one to select his own medical advisor. They declare that it is an inalienable human right to enjoy a sort of three-in-one form of liberty—political, religious, and medical. How is one to meet such an argument?

MR. YOUNG.—By trying to clear up the extraordinary confusion of mind from which it proceeds.

In the first place, there are no such things as inalienable human rights; and, in the second, there is not the slightest analogy between so-called medical freedom and political or religious freedom, as the word freedom in the two cases refers to two distinct things.

"Rights" are not born with individuals, as is so commonly assumed, but conferred upon them by the state when it becomes advantageous to do so. Political freedom, for example, is a right which advanced societies now generally think well to bestow upon men; but it is evidently neither an inalienable right nor a human right, or men would always have had it and so would women. Religious freedom is also a rather newly acquired right,

as certain fairly recent and very bloody chapters in history attest.

MRS. ROSS.—May I interrupt to ask just what we mean by political and religious freedom?

MR. YOUNG.—The freedom to hold and express our own convictions and desires, which, taken together with those of others, form the basis of united action.

MRS. ROSS.—Is that all there is to this dearly prized freedom? It seems to me that we have the same liberty in every other department of human affairs, medicine as well as the rest.

MR. YOUNG.—That is precisely what we have, and, moreover, it is the only real freedom that we can ever hope to have. Free *conduct* is impossible as long as the world holds more than one person. Modern society places no restraint upon convictions in any conceivable matter; but unrestrained conduct it permits in none. For instance, we all have architectural freedom, in that we may hold and expound a theory of making gossamer houses, if we like; but when we come to build we have to conform to the building regulations. We have educational freedom, in that we may believe in and advocate the abolition of schools for children; but when we come to bring up children we have to send them to school. We have medical freedom, too, in that we are welcome to espouse any unheard-of theory of health and healing. But this does not satisfy the advocates of medical freedom. It is conduct or nothing with them. They claim the right of every individual to say when, how, and by whom he and his children shall receive medical advice and treatment.

DR. LATTI.—Or, to put it in another way, the right of every one to take the lives of himself and his children, and often his neighbors, into his own hands,

and, though untrained in medicine, to deny the established truths of medical science and commit himself to some fantastic theory and to some misguided or unscrupulous "healer," who has no more real medical knowledge than himself. In so far as the term medical freedom refers to unrestricted conduct, it is no more reasonable to demand it than to demand unrestrained action in any other branch of human affairs. One could as appropriately demand building freedom or schooling freedom or suicide freedom or a thousand other anti-social freedoms.

MR. YOUNG.—I think our discussion has served quite thoroughly to lay the ghost of the inalienable-human-right idea. This phrase is really no more than a bit of outworn rhetoric left over from the French Revolution. The twentieth century recognizes inalienable *duties*, rather than rights, and the duty of health is not the least of these. That this duty should be enforced by the community has been made very evident to us. How far the enforcement should be carried is still a matter for debate. This is the second point on which the medical freedom people raise their loudest outcry.

MR. MARTIN.—It seems to me they have some show of reason when they claim that the government is not justified in making any kind of treatment, such as vaccination, or the inoculation of serums, or the surgical removal of adenoids, compulsory. So long as the value of a certain form of treatment is not agreed upon by all the "schools" of medicine, they say it is tyranny to enforce it.

DR. LATTA.—What if a "school" of architecture recommended the building of a skyscraper on a foundation of laths? Would it be tyranny for the government to interfere? The very term "school of medicine" is an

absurd relic of the days when all medicine was a guess in the dark, and one school's guess was as good as another. Within the last fifty years medicine has been developing into a science. No really scientific fact concerning hygiene or therapeutics belongs to any "school," and similarly no special propaganda that is limited to any "school of medicine" can be regarded as scientific.

The facts that are beyond scientific dispute in preventive medicine and therapeutics are not yet very numerous, but they at least have the incalculable value of being beyond dispute, and, unfortunately, they are far more numerous than any laws based upon them. The government is justified in enforcing measures based on every one of them and on no more. It is also justified in admitting to medical practice and to public health work such men as have had genuine scientific training and no others.

MR. MARTIN.—What are some of the scientific facts on which the government should take compulsory action?

DR. LATTA.—Sweeping preventive measures should be carried out in connection with such established facts of hygiene and sanitation as the following:

Overcrowding in tenements is a prolific cause of tuberculosis, pneumonia and fatal infant diseases.

Employment of mothers during child-bearing years endangers the health and lives of babies.

Employment of young women in straining occupations injures them and the next generation.

Excessive employment of children injures them for life. (There are now, according to the twelfth census, 1,750,000 children between 10 and 15 years of age employed in this country. The population in the previous

twenty years had increased 50 per cent., while the number of employed children had increased 150 per cent.)

Certain food adulterants and disguised drugs are destroying thousands of adults and children every year.

Pollution of the soil is the chief means of spreading hook-worm and other parasitic diseases.

Pollution of the water supply is responsible for over half our 300,000 annual cases of typhoid fever.

Unclean milk kills 10 per cent. of all our babies before they are a year old.

Feeble-mindedness, syphilis, insanity, sense defects, epilepsy, and alcoholic injury are hereditary. Five to ten per cent. of our population are born with such defects.

These are a few of the health facts, as yet very scantily considered in our laws, that our progressive legislators must heed in framing their programs.

MR. MARTIN.—Are these facts equally sure regarding forms of medical treatment?

DR. LATTA.—Yes, and some of these are of the greatest importance, not only for the cure, but the prevention of disease. Such are:

(a) The established efficacy of certain antitoxins and drugs for curing and preventing certain diseases.

(b) The modern achievement of simple and safe surgical methods for correcting various physical deformities.

(c) The dependence of sound vitality upon sound eyes and teeth.

The value of antitoxins in at least two very dangerous diseases is past all discussion. In both diphtheria and cerebrospinal meningitis the use of antitoxins has brought down the death rate about 75 per cent. Anti-

toxin treatment, under careful regulation, of course, should be compulsory for each of these diseases.

DIPHTHERIA IN CHICAGO BEFORE AND AFTER ANTITOXIN

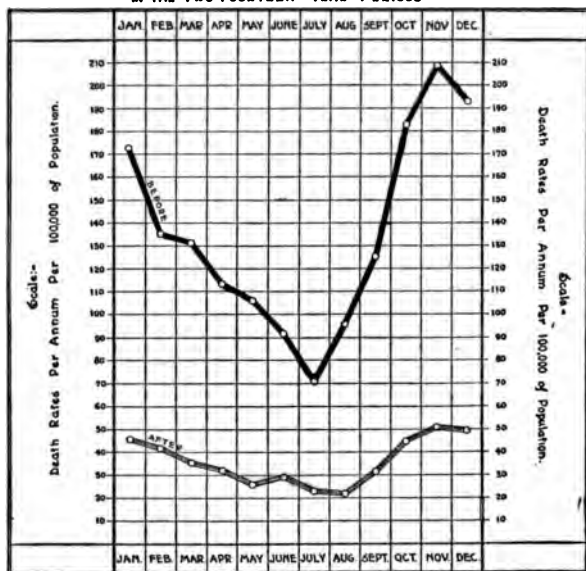
COMPARING THE AVERAGE DEATH RATES OF TWO 14-YEAR PERIODS
BEFORE ~1882-1895 ; AFTER ~1896-1909.

BEFORE 186

AFTER 26

The 751 percent reduction in the death rate is equivalent to a saving of 25,678 lives
in the fourteen years in which diphtheria antitoxin has been used.

AVERAGE MONTHLY DEATH RATES FROM DIPHTHERIA AND CROUP
IN THE TWO FOURTEEN-YEAR PERIODS



DEPARTMENT OF HEALTH, CHICAGO.
BULLETIN, SERIES No. 21.

Vaccination against smallpox we have already repeatedly discussed. It is so far the only known means of preventing the disease, and its immunizing power for a certain length of time is absolute. The state is justified in the strictest enforcement of this measure.

The complete prevention of eye infection at birth by the prompt use of silver nitrate is another matter of scientific certainty. Before the treatment was used, *oph-*

BULLETIN CHICAGO SCHOOL OF SANITARY INSTRUCTION

On March 4 the council passed a very important ordinance, one of the most important ordinances passed in a long time.

Under it every physician and midwife must report to the Health Department within twenty-four hours the occurrence of every case of sore eyes developing within seven days after birth.

We hope we may soon be able to take the next step and supply the nitrate of silver drops for use in all cases in which they cannot otherwise be provided.

There are 60,000 blind persons in the United States.
At least 20,000 of these sad cases
were Preventable!

<p>IF CHICAGO WILL ENFORCE THE USE OF - THIS -</p>  <p>THE DROPS</p>	<p>IT WILL COST - THIS -</p> <p>FIVE CENTS</p> 	<p>AND PREVENT - THIS -</p> 
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To Lose one's SIGHT IS LIKE LOSING LIFE ITSELF.
SAVE YOUR BABY'S SIGHT

Chicago Department of Health - Educational Series No. 91

COMPULSORY HEALTH IN CHICAGO.

A good example of popular education directed by a public health official.

thalmia neonatorum, an eye disease of the new-born, caused one-quarter of all the cases of blindness. Where the silver nitrate treatment is enforced, as it is in New York City, this disease has been practically eliminated. The general enforcement of this treatment would save the eyesight of about 35,000 people in our country every year.

The successful correction of various deformities, such as bow-legs, club-feet, and impeded tongues, formerly regarded as almost miraculous, is now within the technic of every good surgeon. The paralyzing handicap under which every cripple lives is sufficient reason for the state's enforcing skillful surgical treatment in all cases in which the risk is slight and the chances of success practically certain.

MR. MARTIN.—Will parents ever agree to such arbitrary measures as enforced surgical operations?

DR. LATTI.—Not at present, certainly, but when an understanding of the value as well as the safety of such treatment has become general there will be no trouble.

The connection between good health and sound teeth and eyes we have discussed at an earlier meeting. The state cannot afford to permit eye-strain and decayed teeth to leech the vitality and the efficiency of the people, least of all the children. There will be no difficulty in enforcing general mouth sanitation and proper care of eyes when capable public oculists and dentists are available for all who desire their services.

The sanitary, hygienic, and medical facts we have cited form part of a very conservative list of items which the government must heed thoroughly in developing its program of compulsory health. They call for a liberal outlay of public funds, and some curtailment of personal liberty. The result of such action would be

an enormous increase in the nation's wealth and an unprecedented personal freedom from disease.

MR. YOUNG.—The matter of enforcing any kind of medical treatment, which Mr. Martin brought up, is evidently a very minor aspect of the entire problem of compulsory health which bristles with difficulties on every side. How the whole duty of the citizen to keep himself, his children, and his neighbors in good health may be most successfully enforced is a most complex question, but it is at least a beginning to recognize clearly that it should be enforced and to be convinced that a thoroughly established system of compulsory health will have an effect upon the nation more fundamental and more favorable in many ways than our boasted system of compulsory education now has.

MISS PARSONS.—There are many indications that the day is not very far away when such a system will be in force. Our national, state, and municipal governments are more and more concentrating their efforts on means of enforcing individual duties which justice to all requires. Among the ameliorative measures recently enacted, or still under consideration, those relating to health, and especially the health of children, loom large. The health supervision of school children, which is rapidly becoming general and which is beginning to include opportunities for free dental and medical care, is the most conspicuous measure which looks toward actual health enforcement; but this, after all, is only one of many which either have been or must be enacted and carried out to make the health of children secure.

DR. LATTA.—The school and the home can certainly never cope with the problem alone. No matter how sanitary they may be, or how skillful the care they provide, they cannot prevent weakness and disease from

reaching the children in a score of ways outside their control and sometimes even their knowledge. Contaminated water and milk, adulterated food, badly ventilated public buildings and conveyances, unsanitary streets, and city smoke are evils out of the reach of mere parents and teachers, or even school doctors, but they injure children as seriously as any others in the community.

MR. YOUNG.—There are also many faulty conditions and practices in the homes themselves which the school has no power to control. Poverty, bad housing conditions, excessive employment of children, and, more fundamental still, the constant birth of children whose parents are suffering from transmittable diseases, defects, or alcoholism, are some of the factors which make the regulation of public health one of the most widely ramified and difficult problems that modern society has to solve.

What we have been able to do for the school children this year is, therefore, only a beginning of what should be done for them, either during their school days or before, and what, moreover, it will require the thought and energy of the whole community to get done. Again and again our efforts have been checked for lack of outside reinforcement. We have taught the children and their parents the necessity of fresh air, but we have not been able to do away with the windowless bedrooms in which many of them are obliged to sleep. We have told the mothers how to feed their children properly, but many of them have not the money or the time to do it. We have ordered the children to keep clean, but some of them live two blocks from the nearest pump. We have instructed the older girls how to care for babies and impressed upon them the importance of clean milk, but most of the milk that is delivered to their homes isn't

safe for a baby to swallow. We have urged the children to go to bed early, but many of them are still on the street at all hours of the night, selling papers or carrying messages, and there is no law to stop them. We have taken every step we could to prevent our school children from contracting defects and diseases, but we have had to admit to the schools a new crop of diseased and degenerate children which the community permits certain notorious and prolific families to add each year to our population.

MRS. ROSS.—Do you not sometimes feel that in the face of all these adverse conditions the efforts of the school are futile?

MR. YOUNG.—Never. I mention these adverse conditions not at all as a ground for discouragement. It is, indeed, a matter for congratulation that our work for the health of the school children has brought them to light. While the school cannot hope to exert any direct control over such matters as proper tenement house construction, steady and sufficient family incomes, restricted labor for mothers and children, a guarded milk supply, and an observance of the laws of eugenics, its close touch with almost every family in the community makes it the most effective of all agencies for discovering conditions that are injuring children and for creating an informed and exacting public sentiment for correcting them. That these evils will in time be corrected is certain. No unjust and dangerous conditions can long persist when intelligent attention has been directed toward them, and the people have been roused by a vision of better things.

MISS PARSONS.—We surely need to keep sight of the vision. Our hearts and our heads, too, would fail us if we did not now and then pause for a clear survey of the heights we are climbing. This evening, which closes

our year of work, is an especially happy time for such a pause. Before entering on a new year, let us stop for a glimpse ahead. What promise does the future hold for the health of our children?

DR. LATTA.—Every promise. A sound physical inheritance, a wholesomely spent childhood which will develop and strengthen inherited vigor, and an environment which is free from infection. This means that practically every child will be well all the time, and that child mortality, which is now one of our national scandals, will be limited almost entirely to unavoidable accident; in other words, that where ten of our babies and children now die, nine will live to grow up.

MR. YOUNG.—You have surely shown us a shining vision, Dr. Latta. Will you not indicate briefly how it is to be realized?

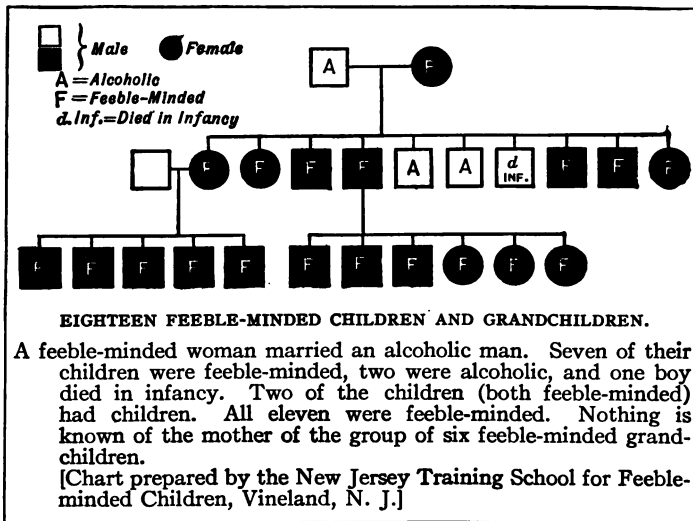
DR. LATTA.—First, a universal sound physical inheritance can only be reached through the practice of eugenics.

MR. ROSS.—And what is that?

DR. LATTA.—We may call it the art of being well born. All that pertains to securing a sound physical and mental inheritance for the coming members of the race goes under the name of eugenics. This department of human aspiration, or the pursuit of the superman, has not yet evolved into what one may call a real science, but it will, in due time, and eventually the people will heed all its mandates. In the meantime, there is enough for society to do in acting on the present common knowledge regarding the hereditary transmission of feeble-mind—really the root of most of our social ills—defective sense organs, and alcoholic injury, to say nothing of the effect of war in lowering the stamina of a people.

MR. ROSS.—What possible connection can there be between war and eugenics?

DR. LATTA.—A most fundamental one. Our purblind governments pick out the very flower of their people's manhood to be slain in war by bullets or disease and leave the old, the worn out, and physically defective men at home to become the fathers of the next generation. Can you imagine a more ironic contrast between the alleged purpose of war, which is to strengthen a nation, and its actual result, which is to weaken it at the very core of its being?



KAKOGENICS (BREEDING OF THE UNFIT).

Should the state assume responsibility for preventing the increase of feeble-mind and other defects through inheritance?

MISS PARSONS.—A few of our states are beginning to recognize the need of selecting sound parents for the next generation. Some are segregating epileptic and

feeble-minded men and women. Indiana, in 1909, took the advanced step of unsexing 800 degenerate men. Nine states can now legally unsex habitual criminals. A few states have recently enacted laws restricting marriage to those who have proper physical and mental qualifications. Washington, perhaps the most advanced state in this regard, requires medical certificates from both contracting parties, signed by a certified physician after due examination, certifying that they are sound and well in body and mind, and free from serious taint in their heredity. Persons prohibited from marrying are those affected with tuberculosis, alcoholism, epilepsy, insanity, deaf-mutism, blindness, and other serious diseases and defects which affect posterity. We must confess, however, that in no state, as yet, has the operation of such radical laws been very successful.

DR. LATTA.—That is no reason for discouragement, however. Laws that are in advance of a popular demand are usually dead letters. Eugenics by its very nature can become a controlling force only through the intelligent coöperation of all the people. This problem, like every health problem, is fundamentally one of popular education.

MISS PARSONS.—It is interesting to note in this connection that the largest of all the exhibits at the great International Hygiene Congress, held in Washington in September, 1912, was devoted to eugenics and sex-hygiene.

DR. LATTA.—The second item in our health forecast, a childhood spent in wholesome work and play which will develop and strengthen natural vigor, has been the theme of our entire year's study. It is not primarily a medical question, and I should be glad to hear some one else sum up the conditions on which such a childhood depends.

MR. ROSS.—Dr. Latta is right. It is an economic question. Health is a purchasable commodity. A community can make its children, except the ill-born ones, as healthy as it pleases if it will pay the bills. Nourishing food, pure water, good air, plenty of play and rest, and competent medical care, we are told, are all that is needed to keep children well. The cost of these necessities is not formidable, but it *must* be paid if our present heavy burden of juvenile sickness and death is to be reduced.

MR. YOUNG.—Who is to pay it?

MR. ROSS.—The cost must be divided between the family and the community.

MR. YOUNG.—But many families haven't enough income to afford good health. Schools and health departments likewise can't get the necessary appropriations for efficient service.

MR. ROSS.—True. Society has not yet learned to distribute its great wealth through the channels that bring the best returns. It has not yet grasped the vital fact that to rear children properly, a family must have economic freedom; that a school or health department to do its work as well, must be as free. At the present cost of living, a working family having three children must have an income of at least \$600 to \$1,000, according to locality, to keep decent and well. A school, to be conducted properly, requires an annual expenditure of not less than \$30 to \$40 a year on each child; in large cities more. A health department, to afford effective protection for every member of the community, must spend on instruction, quarantine, nursing, and treatment at least 35 cents a year on every member of the community.

When we all come to realize that the dollar value of the human lives in this country amounts to over \$250,000,000,000, whereas the total amount of physical

wealth is less than half this sum, \$110,000,000,000, we shall conclude that it is the simplest business sense to give our first attention to the up-keep of the more valuable national asset. The dollar value of a child between five and fifteen years old, we have previously seen, is between \$1,500 and \$3,000. The up-keep and care of a motor-car of equal value might easily cost 50 per cent. of this amount a year. The maintenance and care of a child cost less; but, notwithstanding the moderation of the amount, several millions of our children are failing to get the appropriation. When society understands the value of children, their present pathetic struggle for health and life will be won. Like the practice of eugenics, the safeguarding of children's health throughout childhood waits only for an educated public to demand it.

DR. LATTA.—Our last item, an environment free from infection, is one which involves both the doctors and the laity. It means literally the eradication of all the "catching" diseases from the earth.

MRS. ROSS.—I cannot see how that will ever be done. How can you put a stop to measles, for instance, when it is so often transmitted before it is recognized?

DR. LATTA.—At our present stage of medical knowledge I cannot say. It can, however, be checked now to some extent by teaching people to recognize its first symptoms, and to conform faithfully to quarantine regulations. To repeat, once more, it is only through a certain amount of medical education of all the people that we can ever get control of the common contagious diseases of childhood, unless, possibly, prophylactic serums should be developed which would render children immune to all of them.

Measles in a School Is Like Fire in the Tall Grass.

If you let the child have measles when he is young, you may save a doctor's bill later on, but you may have to pay the undertaker now.

When grown people have "chickenpox," hang out the yellow flag and get vaccinated.

It is sometimes difficult to protect a child from scarlet fever, but it is easier than to see a child made deaf for life.

If the child shows the rash of scarlet fever, do not persuade yourself it has chickenpox. Send for the doctor.

A neighbor may send your baby a basket of toys; but if there has been scarlet fever in that family, put the basket and its contents in the fire.

POPULAR EDUCATION IN PREVENTIVE MEDICINE.

From the Kansas Health Almanac.

MR. MARTIN.—To require our children to be vaccinated for half a dozen different diseases would be about as bad as running the risk of their taking a few!

DR. LATTA.—It will probably not come to that. The medical and ethical education of the people is not a hopeless task. When every one has enough medical knowledge to recognize suspicious symptoms, and enough conscience to take the necessary steps to guard others from infection, the battle will be more than half won.

MISS PARSONS.—Before that time we shall have to have free expert medical service.

MR. MARTIN.—Why so?

MISS PARSONS.—Isn't it too much to expect the human conscience to urge the employment of a doctor at private expense for the sake of quarantining a child who may not seem sick enough himself to need medical care? Society cannot safely depend on voluntary private con-

tributions for defraying the necessary cost of discovering contagious diseases.

DR. LATTA.—There is not a better instance of how a free and accessible public medical service would benefit the entire community than the one which Miss Parsons cites. It would be the most powerful of all factors in the suppression of contagious diseases. At present the epidemics get started in the poorer districts before the doctors hear of them. To avoid this it is necessary that good doctors and nurses be close to the people, which can never be while high fees keep them apart.

MR. MARTIN.—I have been struck by the unanimity with which every one of you has declared that public health is fundamentally a question of public education, not only medical, but economic and social. Now, how is all this popular education to be carried on?

MISS PARSONS.—By far the most thorough and effective way of directing it would be through a national department of health, whose chief business would be the collection and distribution of health information throughout the land. Just as the department of agriculture gives out facts concerning the best methods of raising crops of animals and grains, the department of health would give out instructions for securing the richest possible human harvest, the value of which would exceed many times that of any other national output.

MR. YOUNG.—Such a department, to do its most effective work, would have to coöperate closely with the schools; for, in spite of all their imperfections, they are our best equipped agency for carrying on public instruction.

MISS PARSONS.—So they are, and their influence can, moreover, be enormously increased. The greatest weakness of our schools as agents of instruction at present



It is better to exclude one child with a sore throat from the school for a few days than to close the school for a week and treat a dozen cases of diphtheria.

The Fable of the Country School

THERE was a certain country school teacher who was so busy that she did not read very much and did not believe that it was worth her while to know any new fangled ideas about how diseases are transmitted. One day a pupil in her school complained of a sore throat; the next day the teacher heard that the child had diphtheria. Several more children complained of sore throat and in a few days there were more cases of diphtheria. So the health officer closed the school and it remained closed six weeks. The teacher suffered much from the loss of salary and the children missed much schooling that they needed.

Next year a new teacher came to the school. She believed that healthy children are easier to teach and to handle than sickly ones, so she set about making the school healthy. She found that the children had all been using one common drinking cup, which they dipped into the water bucket and then drank from. In this way they made it perfectly certain that if any child had any contagious disease all of them would have a chance to get it. So the teacher got a water cooler and made each child bring a cup to school for his own use. She also ventilated the school and got the trustees to put the sanitary arrangements in order.

One day a child came to school and complained of a sore throat. The teacher sent the child right home and got the doctor to send a culture from its throat to Richmond. When the State Board of Health said that it was diphtheria, the child was quarantined. But none of the other children caught the disease and the school kept right on. Whereat the teacher believed even more firmly that disease is preventable if you know how.

Moral: Real Knowledge is a Handy Thing to Have around the School.

HEALTH ADVERTISING.

Health Commissioner Williams of Virginia recognizes the universal appeal pictures and stories. This one page from the *Virginia Health Alman* is worth a volume of abstract argument in educating a community to demand health supervision in schools.

is that their efforts are confined almost entirely to little children. Ninety-three per cent. of all the nation's children never go beyond the grammar school, and half of these don't get through it.

MR. ROSS.—Is that possible? How much practical knowledge, medical, economic, and social, are such little youngsters able to carry away with them?

MR. YOUNG.—That is a fair question. We are very liberal with the canned knowledge we offer them—to be opened on some future day when they are parents and householders and voters, and their little cans are either stale or lost. Knowledge, to be of much service, has to be fresh when it is used, and, as Miss Parsons intimated, our schools must devise means of serving it fresh to all the people when they need it, not only the children, but the parents who are bringing up children, the voters who are trying to run the government. We shall have to grow out of the notion that the work of education is over for the children who are no longer formally enrolled in school classes. The school must learn to hold right on to those children by means of clubs, continuation classes, lectures, exhibits, entertainments, and publications; so that the children, as they grow older, will still regard the school as a center of vital instruction and inspiration.

MISS PARSONS.—Our wide-awake communities have already grasped this broader importance of the school. Many cities and country districts are uniting the school and the home by means of teacher nurses. Many are using their school houses most successfully as social centers. In Texas the movement to enlarge the educational influence of the school has become state wide, and a state architect is employed to supply free plans to all communities that wish their schools equipped for general educational and social purposes; and practically all the com-

munities that are building or remodeling their schools wish to have them so.

MR. MARTIN.—The Texas schools are an encouraging approach toward the ideal school for which we have all been striving. Let us take a moment to picture this school. Our health forecast, to be complete, should include a description of the agency which is to exercise so dominating an influence on the health of the people.

MR. YOUNG.—The school of the future will not only teach but *demonstrate* health. This means that the school houses and their surroundings will in time reach sanitary perfection, and that commodious and well-appointed playgrounds, gymnasia, swimming pools and lunch-rooms will be provided for 100 per cent. of our children.

DR. LATTA.—It means also that the school will follow a positive program of health development for its children, all of whom will be under its supervision from birth. It is, indeed, in the years preceding school age that the need of public health supervision is greatest. At present one child in every five dies before he is a year old; and one child in every three or four before the age of six. The same diseases, moreover, which take these literally uncounted lives weaken and maim hundred of thousands of children who survive their attacks. The school must accordingly reach out to the homes, instruct parents even before their babies are born, and then guard the new arrivals against the havoc-working diseases which now make a terror of the first five years of childhood and fill our primary grades with defective children and our cemeteries with small-sized graves.

Among its enrolled children the school will not only build up the weakling and treat the defects that it could not prevent, but it will develop the health of those chil-

dren who are well, and strengthen those who are already strong. It will aim to bring every pupil to his maximum pitch in physical strength and endurance no less than in mental vigor. While the school of the future must have its practicing doctors, surgeons, and dentists, and their nurse assistants always available to give treatment, as well as accommodations and appliances for medical, dental, orthopedic, and simple surgical treatment, its most conspicuous health service will be in the development of hygiene and physical education. The greater the number of hygienists, the smaller the number of physicians who will be required to give their time to treatment. Similarly, the greater the area devoted to well-used playgrounds, gymnasia, and swimming pools, the less space need there be for dispensaries and operating rooms.

MISS PARSONS.—One further word as to health education. We have just seen how the educational influence of the school is being extended. In addition to teaching the children whatever they can learn that makes for health, the future school will do as much for their parents. Libraries, exhibits, and museums will offer available and graphic information on all important health matters. Lunch rooms and milk stations connected with the school will afford constant demonstrations of the proper selection and preparation of foods. Health nurses on every school staff will instruct mothers, both in the schools and in the homes, in the care of babies and children. Every process, in short, that is essential to keeping a family or a community well and strong will be clearly taught and demonstrated in the school.

MRS. ROSS.—That will not be all. The school will not only teach but train. It will not only show girls and women the art of wholesome living, but perfect them

in the art. Most girls become housekeepers and mothers, 84 per cent. of whom do their own housework and cooking. Our schoolgirls and their mothers actually hold the strength of the nation in their hands. The school of the future will see that these hands are fitted to their task.

MR. MARTIN.—In addition to carrying on instruction and training, each school will become to some extent an experiment station, setting itself to learn the health conditions and needs of its own community and to devise means for meeting the latter. It will thus become a center of information and direction which will enable both public and private improvement agencies to co-operate effectively under its direction.

MR. YOUNG.—It is indeed only through such close and constant contact with the vital concerns of the community and with all the members of society, adults and babies no less than enrolled children, that the school of the future will successfully educate the people in the principles that make for health and happiness. When both by precept and practice it trains all the people all the time to right thinking on the three fundamental concerns upon which our national health depends—our physical, economic and social welfare—the alleged consummate support of our democracy, the public school, will become such in very truth.

SUGGESTED READING

COMPULSORY HEALTH

BRUÈRE. *The New City Government*, Chapter XI.

GORST. *Children of the Nation*.

SEAGER, HENRY R. *Social Insurance: Program of Social Reform*.

WARBASSE. *Medical Sociology: The Relation of Medicine to Society.*

EUGENICS

CARNEGIE LABORATORY FOR EXPERIMENTAL EVOLUTION.
Bulletins.

DAVENPORT, CHARLES B. *Eugenics, the Science of Human Improvement by Better Breeding.*
Heredity in Relation to Eugenics.

JORDAN. *The Human Harvest.*

EUGENICS EDUCATION SOCIETY. *Problems in Eugenics.*

HOME AND SCHOOL IMPROVEMENT

CHAPIN, ROBERT COIT. *The Standard of Living among Workingmen's Families in New York City.*

PERRY. *Wider Use of the School Plant.*

SALEEBY, C. W. *Parenthood and Race Culture.*

SEARCH. *The Ideal School.*

SUMMARY OF SUGGESTED READING

The following list has been prepared for those who wish to study special phases of the conditions affecting the health of school children. These conditions include many that are outside the school and which must be thoroughly considered in the shaping of any successful school health program. Much that has recently been printed on these subjects is necessarily unadapted to the needs of the general reader who ordinarily has much difficulty in finding the matter he requires. The books and articles here recommended have been selected on account of their accuracy, timeliness, and simple, attractive treatment. The accompanying comments will serve as additional guides to a further study of the subjects treated in this book.

BOOKS

ALLEN, WILLIAM H., *Civics and Health*. 411 pp. \$1.25. Boston: Ginn & Company, 1909.

A comprehensive and constructive study of the control of health through community agencies, especially the public school. Illustrated with photographs, tables and charts.

Efficient Democracy. 346 pp. \$1.50. New York: Dodd, Mead & Co., 1908.

Shows the need of applying efficiency tests to all public business and suggests how to devise records and reports so as to afford the fact basis essential in the proper control of public service, including health work and education.

ALLEN AND SNEDDEN, *School Reports and School Efficiency*. 183 pp. \$1.50. New York: The Macmillan Company, 1908.

A critical and constructive study of educational statistics as they have developed in the United States. Illustrated with tables.

ARNOLD, FELIX. *School and Class Management*; vol. 2, *Administration and Hygiene*. 292 pp. \$1.00. New York: The Macmillan Company, 1910.

A practical program of school management by one who has had many years of successful experience.

AYRES, LEONARD P. *Open Air Schools*. 171 pp. \$1.32 (postpaid). New York: Doubleday, Page & Co., 1910.

An account of the origin, development, and effectiveness of the open air school, describing the English, German, and American types, with definite information as to clothing, food cost, and administration. Illustrated.

BRUÈRE, HENRY. *The New City Government*. 438 pp. \$1.62 (postpaid). New York: D. Appleton & Co., 1912.

A discussion of municipal administration embracing many constructive suggestions regarding health work as well as other important items of city responsibility.

BRYANT, LOUISE STEVENS. *School Feeding; Its History and Practice at Home and Abroad*. 310 pp. \$1.50. Philadelphia: J. B. Lippincott Company, 1913.

Includes a history of the school lunch movement, a treatment of its present status, and studies of malnutrition; the food needs of growing children, and school menus. Illustrated with photographs, tables and diagrams.

CARPENTER, ROLLA C. *Heating and Ventilation of Buildings*, 562 pp. \$4.00. New York: John Wiley & Sons, 1910.

A thorough manual for architects and engineers in charge of heating plants. Illustrated.

CARRINGTON, THOMAS SPEES. *Fresh Air and How to Use It*. 250 pp. \$1.00 (postpaid). New York: National Association for the Study of Tuberculosis, 1913.

Describes in a practical way the best modern devices for securing a maximum of fresh air—window tents, roof bungalows, sleeping porches, clothing, bedding, loggias for country houses. Illustrated with plans and photographs.

CHAPIN, ROBERT COIT. *The Standard of Living Among Working Men's Families in New York City*. 388 pp. \$2.00 (postpaid). New York: Charities Publication Committee, 1909.

An accurate and comprehensive study of the actual cost of living among working men's families; including a thorough discussion of the cost and selection of food.

SUMMARY OF SUGGESTED READING 369

DAVENPORT, CHARLES B. *Eugenics, the Science of Human Improvement by Better Breeding.* 35 pp. 50 cents. New York: Henry Holt & Co., 1911.

Heredity in Relation to Eugenics. 298 pp. \$2.00. New York: Henry Holt & Co., 1911.

The most comprehensive and important collection of facts relating to eugenics yet published in this country.

DENISON, ELSA. *Helping School Children.* 352 pp. \$1.55 (postpaid). New York: Harper & Brothers, 1912.

A practical guide for individuals and organizations seeking to better the condition of children in school; based upon work already done in 400 cities and towns. Illustrated.

DAWSON, W. HARBUTT. *Social Insurance in Germany, 1883-1911.* 283 pp. \$2.00. New York: Charles Scribner's Sons, 1912.

An account of the history, operation, and results of German national insurance and a comparison with the National Insurance Act of 1911.

GORST, SIR JOHN E. *Children of the Nation: How Their Health and Vigor Should Be Promoted by the State.* 297 pp. \$2.50. New York: E. P. Dutton & Co., 1907.

A vigorous and instructive discussion of the obligation which the state owes to itself as well as to the children to guard the latter's health.

GREEN, LOUISE M. *Among School Gardens.* 388 pp. \$1.25. New York: Charities Publication Committee, 1910.

A thorough discussion of the place of gardening in a school curriculum, together with detailed directions for developing school gardens—selection and cost of equipment, planning, planting, care of gardens, and the harvesting of crops. Illustrated.

GRICE, MARY V. *Home and School United in Widening Circles of Inspiration and Service.* 154 pp. 60 cents. Philadelphia: Christopher Sower & Co., 1909.

A working plan for coöperation between parents and teachers in promoting the welfare of school children; presented by a successful leader in such work.

GULICK, LUTHER H. *The Efficient Life.* 195 pp. \$1.20. New York: Doubleday, Page & Co., 1907.

Outlines in vivid form the habits on which good health depends and gives practical suggestions for cultivating them.

The Healthful Art of Dancing. 273 pp. \$1.54 (postpaid). New York: Doubleday, Page & Co., 1910.

Gives the results of introducing dancing into public schools and playgrounds and includes a classified list of folk dances suitable for various classes and occasions.

GULICK AND AYRES. *Medical Inspection of Schools*. 244 pp. \$1.50 (postpaid). New York: Survey Associates, Inc., 1913.

An authoritative, comprehensive statement of the present status of medical inspection of schools in America. Illustrated with photographs, tables, diagrams, and forms.

HALL, G. STANLEY. *Educational Problems*. Vols. I and II. 1424 pp. \$7.50. New York: D. Appleton & Co., 1911.

Throws light on many questions which are pressing for solution in American elementary schools; contains the wide array of facts and opinions developed in Dr. Hall's Pedagogical Seminary during the past 25 years.

HART, HASTINGS H. *Cottage and Congregate Institutions for Dependent and Delinquent Children*. 136 pp. Paper 50 cents; cloth \$1.00. New York: Charities Publication Committee, 1910.

A guide for trustees and officers of children's institutions in building and organizing children's homes. Illustrated.

Preventive Treatment of Neglected Children. 419 pp.

\$2.50. New York: Charities Publication Committee, 1910.

Contains studies of children's institutions, child helping societies, family home care, the placing out system, the juvenile court, and miscellaneous preventive agencies.

HOAG, ERNEST BRYANT. *The Health Index of Children*. 188 pp. 80 cents. San Francisco: Whitaker & Ray Wiggin Co., 1910.

A practical hand-book for school officials and teachers who are trying to develop a program of health supervision in schools. Illustrated.

HOGAN, LOUISE E. *Children's Diet in Home and School*. 194 pp. 75 cents. New York: Doubleday, Page & Co., 1910.

A practical guide for the feeding of children from infancy to the age of twelve; containing detailed directions for selecting, preparing, and serving food in home and school.

HOGARTH, A. H. *Medical Inspection of Schools*. 360 pp. \$2.00. Oxford: University Press, 1909.

A broad discussion of the history and meaning of health supervision in schools, including a concrete program for carrying on such work.

SUMMARY OF SUGGESTED READING 371

HOLMES, ARTHUR H. *Conservation of the Child*. 345 pp. \$1.25. Philadelphia: J. B. Lippincott Co., 1912.

"A manual of clinical psychology presenting the examination and treatment of backward children."

JORDAN, DAVID STARR. *The Human Harvest*. 122 pp. \$1.07 (post-paid). Boston: American Unitarian Association, 1907.

"A study of the decay of races through the survival of the unfit."

KELNYACK, T. N. *Medical Examination of Schools and Scholars*. 434 pp. \$2.50. London: P. S. King & Son, 1910.

A study of medical inspection as practiced in England, with suggestions for extending health supervision into public and private secondary schools, industrial schools, and orphanages.

OPPENHEIM, NATHAN, M. D. *Care of the Child in Health*. 308 pp. \$1.25. New York: The Macmillan Company, 1900.

A practical program of child hygiene from infancy through childhood, formulated by a children's specialist.

The Development of the Child. 296 pp. \$1.25. New York: The Macmillan Company, 1898.

An important contribution to child study.

PERRY, CLARENCE ARTHUR. *Wider Use of the School Plant*. 350 pp. \$1.25 (postpaid). New York: Charities Publication Committee, 1910.

A detailed description of the use of school buildings for such activities as vacation schools, public lectures, social centers, and evening schools. Questions of administration, cost, and organization fully treated. Illustrated.

PORTER, CHARLES, M. D. *School Hygiene and The Laws of Health*. 313 pp. \$1.50. New York: Longmans, Green & Co., 1906.

A good reference book on the physiology and pathology of children as well as on school hygiene and sanitation. Illustrated.

REEDER, RUDOLPH R. *How Two Hundred Children Live and Learn*. 247 pp. \$1.25. New York: Charities Publication Committee, 1910.

A description of living conditions in a model orphanage, written by the superintendent. Illustrated.

SALEEBY, C. W. *Parenthood and Race Culture*. 389 pp. \$2.50. New York: Moffat, Yard & Co., 1909.

Presents plainly the problems of race development and emphasizes the need of motherhood as the most important of all professions.

SCUDDER, MYRON. *Recreation for Rural Communities*. Yonkers: World Book Co. (in press).

A practical handbook for conducting recreational activities in the country.

SEAGER, HENRY R. *Social Insurance: A Program of Social Reform*. 175 pp. \$1.00. New York: The Macmillan Company, 1910.

Advocates clearly the general principle that certain of our most pressing social problems—among them health—can be adequately met only by the state taking direct positive action.

SEARCH, PRESTON W. *The Ideal School or Looking Backward*. 375 pp. \$1.20. New York: D. Appleton & Co., 1908.

A study of possible school conditions—pedagogical, sanitary, hygienic—which would make for the most complete and harmonious development of children.

SHAW, EDWARD R. *School Hygiene*. 260 pp. \$1.00. New York: The Macmillan Company, 1910.

Gives clear and thorough directions for securing good sanitation in school buildings and hygienic conditions for school children. Illustrated.

SMEDLEY, EMMA. *Institution Recipes for Use in Schools, Colleges, Hospitals and Other Institutions*. 280 pp. \$1.35 postpaid. Media, Pa.: The Author.

TAYLOR, F. W. *The Principles of Scientific Management*. 144 pp. \$1.50. New York: Harper & Brothers, 1911.

A discussion of the theory of scientific management sufficiently general to admit of application in a wide variety of cases.

TERMAN, LEWIS M. *The Teacher's Health*. 137 pp. Boston: Houghton-Mifflin Co., 1913.

Discusses mortality and morbidity rate; gives health suggestions, and indicates the responsibility of normal schools.

WARBASSE, J. P. *Medical Sociology—The Relations of Medicine to Society*. 355 pp. \$2.00. New York: D. Appleton & Co., 1909.

The special aim of medical science stated to be the study of the *prevention* of conditions which destroy health and the furnishing of authoritative information which will place prevention largely in the hands of the public.

SUMMARY OF SUGGESTED READING 373

WITMER, LIGHTNER. *The Special Class for Backward Children*. 275 pp. \$1.50. Philadelphia: Psychological Clinic Press, 1911. An account of eighteen backward children who were taught in a special class for six weeks at the psychological laboratory and clinic of the University of Pennsylvania. Illustrated.

ARTICLES, BULLETINS AND REPORTS

ARTICLES AND REPRINTS

Economic Aspect of Lengthening Human Life. Irving Fisher. 18 pp. New Haven, 1909. The Author.

A plea, urged from the standpoint of economy, for insurance companies to spend a small percentage of their incomes to educate the public as well as legislators to conserve and prolong human life.

CYCLOPÆDIA OF EDUCATION. New York. The Macmillan Company, 1911. Vol. II, pp. 627-630. *Food and Feeding of Children*. W. H. Burnham.

HARPER'S MONTHLY. April, 1912. *The New Meaning of Public Health*. Robert Bruère.

Traces recent enlargement of government responsibility and expenditure with respect to public health, and indicates lines for further action.

JOURNAL OF HOME ECONOMICS. December, 1912. *Report of the New York School Lunch Committee*. Mabel E. Kittredge.

POPULAR SCIENCE MONTHLY. March, 1912. *Professional Training for Child Hygiene*. Lewis M. Terman.

Includes an analysis of the requirements involved for successful public supervision of children's health, statements of unsolved problems, and constructive suggestions.

TEACHERS COLLEGE BULLETIN. Education Series A. No. 4. 10 cents. *Hints on Clothing*. Mary Schenck Woolman.

TEACHERS COLLEGE RECORD. May 1912. 30 cents. *Health Instruction in the Elementary School*. T. D. Wood, M. D., et al. States principles relating to health instruction and describes concretely typical methods and materials which have been developed for all the grades through the application of these principles.

THE AMERICAN MAGAZINE. March-May, 1911. *The Gospel of Efficiency—The Principles of Scientific Management*. F. W. Taylor.

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THE OUTLOOK. December 7, 1912. *The Problem of National Health*. Earl Mayo.

A constructive statistical study of the annual loss in wealth and human lives due to preventable disease.

THE PSYCHOLOGICAL CLINIC. April 15, 1912. 20 cents. *Symposium on School Feeding*.

Contains articles on *The School Feeding Movement*, *Administration of School Luncheons*, *The Training of the School Dietitian*, *Effects of Coffee Drinking Upon Children*.

THE SURVEY. New York. \$2.00 a year.

A weekly journal which furnishes a basis of facts for intelligent and permanent social betterment in home, school, industry, and government.

GOVERNMENT PUBLICATIONS

KANSAS STATE BOARD OF HEALTH, Topeka. *Kansas Health Almanac*, 1912.

MINNESOTA STATE BOARD OF HEALTH. *An Outline for the Health Grading of the School Child*. 1912.

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A. C. Monohan, 73 pp. (Bulletin, 1913, No. 8).

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PUBLICATIONS OF SOCIETIES AND OTHER ORGANIZATIONS

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Describes typical parks—national, state, county and city—also discusses the social significance of parks and playgrounds.

Annals, March, 1911. Paper \$1.00; cloth \$1.50. *The Public Health Movement.* 298 pp.

Presents many current phases of the public health movement such as *Clean Milk and Public Health*, *The Rural Health Movement*, *Prevention of Infantile Blindness*.

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Health Supervision in Schools, Child Labor versus the Conservation of School Children, How Should Hygiene Be Taught? Education for Better Parenthood.

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Volume I. (First three congresses). *The Problems of Hygiene and the Province of the Normal School.* H. H. Seerly, President, Iowa State Normal School.

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(a) *New Principles in the Teaching of Hygiene.*

(b) *The Teaching of Sex Hygiene.* C. Ward Crampton, M. D., Director of Physical Training, New York City Public Schools.

Shall Organized Play Be Made a Regular Part of the Public School Curriculum? G. W. A. Lucky, Professor of Education, University of Nebraska.

The Educative Value of the Child's Recreative Life and Systematic Provision for It. George W. Ehler, Public Schools' Athletic League, Baltimore.

The Principles Underlying Modern Physical Education. Herman H. Horne, Professor of the History of Education, New York University.

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Volume III. (Fifth congress). *An Inquiry Into the Problem of Desks for School Children.* William A. Stecher, Director of Physical Education, Public Schools, Philadelphia.

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The Consecration of the Affections (Often Misnamed Sex Hygiene). Richard C. Cabot, Assistant Professor of Clinical Medicine, Harvard University.

Volume IV. (Sixth congress). *Contagious Skin Diseases in Relation to Schools.* Charles J. White, M. D., Assistant Professor of Dermatology, Harvard University.

Defects in the School Curriculum in Physical Training as Shown by the Disabilities of College Students. Dudley A. Sargent, M. D., Director Hemenway Gymnasium, Harvard University.

Health Problems Encountered in Home Visits to School Children. Alfred E. Shipley, M. D., Brooklyn, N. Y.

Report of the Committee on Heating and Ventilation. Luther H. Gulick, M. D., New York.

School Nurse as a Link in the Chain of Preventive Medicine. Margaret E. Carley, Supervisor of Nurses, Department of Hygiene, Boston Public Schools.

Some New Problems of School Hygiene. Ernest Bryant Hoag, M. D., Minnesota State Board of Health.

Problems of Health Supervision in the Schools of Massachusetts. David Snedden, Commissioner of Education, Massachusetts.

BOY SCOUTS OF AMERICA, New York. *Official Handbook*, 1913. 408 pp. Paper 25 cents; cloth 50 cents.

"A handbook of wood-craft, scouting, and life craft." Illustrated.

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BUREAU OF MUNICIPAL RESEARCH, New York. *Outside Coöperation with the Public Schools of Greater New York*, 1912. 48 pp. 25 cents.

A study of the present and potential power of 119 public and private agencies whose forces can be utilized for promoting the welfare of school children. Illustrated.

BUREAU OF MUNICIPAL RESEARCH, PHILADELPHIA. *Report of the Philadelphia Milk Show*, 1911. 123 pp. 50 cents (postpaid).

A practical manual for conducting similar exhibitions. Illustrated.

CAMP FIRE GIRLS, New York. *The Book of the Camp Fire Girls*, 1913, 61 pp. Illustrated. 25 cents.

CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, New York.

Medical Education in Europe. Abraham Flexner, 1912. 357 pp. 17 cents (postpaid).

Medical Education in the United States and Canada. Abraham Flexner, 1910. 346 pp. 17 cents (postpaid).

CARNEGIE LABORATORY FOR EXPERIMENTAL EVOLUTION, Cold Springs, L. I.

Series of Bulletins reporting currently the results of investigation carried on at the laboratory.

CHILD HYGIENE ASSOCIATION, Philadelphia. *Report of the Philadelphia Baby Show, with the Proceedings of the Conference on Infant Hygiene*, 1912. 270 pp. \$1.00 (postpaid).

This report constitutes a valuable manual for those who are arranging hygiene exhibits and conferences. Illustrated.

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An extensive and important contribution to "practical" eugenics, viewed from many angles.

FRANCIS W. PARKER SCHOOL, Chicago. *Year Book*, 1912. 139 pp. 35 cents.

A concrete account of how interests natural to childhood were made the motive of a year's active school work.

HEALTH EDUCATION LEAGUE, Boston. *Health Education Series*. Price of single pamphlets, from 2 to 4 cents each.

A series of brief and practical pamphlets on health topics, such as *Healthful Homes*, *The Care of Little Children*, *The Observation of Health Day in Schools*, *Habits of Health*.

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NATIONAL EDUCATION ASSOCIATION *Journal of Proceedings and Addresses*. (Yearly) \$2.00. Secretary's Office, Winona, Minn.

1911. (a) *Health and Ventilation*. (b) *Open Air Schools*.

Leonard P. Ayres, Associate Director, Department of Child Hygiene, Russell Sage Foundation. *The Health of the Child the Joint Concern of Parent and Teacher*. W. A. Evans, M. D., Professor of Preventive Medicine, Northwestern University, formerly Health Commissioner of Chicago. *The Influence of Open-air and Low-temperature School Rooms on the Mental Alertness and Scholarship of Pupils*. Frank G. Bruner, Assistant Director, Department of Child Study and Educational Research, Public Schools, Chicago.

1912. *The Problems of Child Hygiene and the Contribution of Hygiene to Education*. William H. Burnham, Professor of Pedagogy and School Hygiene, Clark University.

The Hygiene of Rural Schools. Fletcher B. Dresslar, Specialist in School Hygiene, United States Bureau of Education.

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Eighth year book, part 2, 1909, *Education with Reference to Sex: Agencies and Methods*. 90 pp. C. R. Henderson, Professor of Sociology, University of Chicago.

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PLAYGROUND AND RECREATION ASSOCIATION OF AMERICA.

1 Madison Square, New York. *The Playground*. \$2.00 a year. A monthly journal, the organ of the Association, indispensable for one who would follow the recreation movement, or bear an effective part in it. (Index for first five volumes in the March number, 1912; index for sixth volume in March number, 1913.)

PUBLIC EDUCATION ASSOCIATION OF THE CITY OF NEW YORK.

Bulletin No. 9, 1913. *Shall the Schools Serve Lunches?* 6 pp. A report of work done in the New York Schools by the School Lunch Committee, with recommendations for an expanded program under the Board of Education.

RUSSELL SAGE FOUNDATION, New York. Pamphlets.

A Comparative Study of Public School Systems in the Forty-eight States, 1912. 32 pp. 15 cents.

"Fifteen tests of educational efficiency and accomplishment."

Folk Dancing. Luther H. Gulick. 20 pp. 5 cents. Illustrated. A manual for teaching folk dancing in schools.

Medical Inspection Legislation. Leonard P. Ayres. 53 pp. 20 cents.

"A tabular presentation of principal features of laws now in force in the United States; an abstract of the different laws; suggestions as to what a model law should include; finally each law verbatim."

Money Cost of Repetition versus Money Saving through Acceleration. Leonard P. Ayres. 11 pp. 5 cents.

"Results of the study of the age and progress records of school children in twenty-nine cities, computing the money saved through rapid progress and that lost through slow progress."

Receiving Home for Foundlings and for Mothers with their Babies. The New Type of Foundling Asylum. 8 pp. 5 cents. Gives detailed directions for building and equipment. Illustrated with plans and photographs.

Recreation Legislation. Lee F. Hamner. 68 pp. 20 cents.

The Exploitation of Pleasure. Michael M. Davis, Jr. 61 pp. 10 cents.

A study of commercial recreations in New York City.

The Measurement of Educational Processes and Products. Leonard P. Ayres. 9 pp. 5 cents.

"An account of the development of the quantitative method in education."

The Relation of Physical Defects to School Progress. Leonard P. Ayres. 9 pp. 5 cents.

A statistical study based on 7,608 cases.

The Unused Recreational Resources of the Average Community. Clarence A. Perry. 14 pp. 5 cents.

Suggests many ways in which communities may have organized recreation at small cost.

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